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REGULAR MEETINGS

The California State Board of Health meets regularly the first Saturday of each month, but the stated meetings of January, April, July, and October constitute the quarterly meetings required by law to be held at the Capitol of the State.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, California.

OCTOBER BULLETIN.

SURGEON RUPERT BLUE,
United States Public Health Service.

Surgeon Rupert Blue needs no introduction to California. The splendid testimonial given the United States Public Health Corps by the citizens of San Francisco, when they tendered Dr. Blue a reception and banquet some two years ago upon the completion of one of the most brilliant sanitary campaigns of history, was fully indorsed by the entire State. The decision of the government to continue Dr. Blue in command of the plague eradicative measures on the Pacific coast, and Dr. Blue's personal sacrifice in remaining, should also be fully appreciated by the citizens of the State. The two articles in this Bulletin on plague and the California ground squirrel have been written by officers of Dr. Blue's command stationed in San Francisco and Los Angeles.

Every citizen of California should read the story of how plague, the greatest and most dreaded of all human disease enemies, may be fought to a finish. This story is told in the report of the Citizens' Health Committee of San Francisco, "Eradicating Plague from San Francisco." The problem of plague has now passed on to the farmers, and they should make it possible for California to add the final chapters to the story of complete victory over our plague enemy.

DISEASE AND THE PUBLIC.

By Martin Regensburger, M.D., President California State Board of Health.

A few years ago, when an active campaign was being waged against plague in San Francisco by the Federal Government, those in charge reached a stage when further progress seemed hopeless. They were doing all they could individually in relief measures, but it was found that the coöperation of the general public was absolutely necessary before the desired ends could be gained. For this reason an educational campaign was begun, and lectures were delivered before clubs, societies, labor unions, churches, and many other representative bodies in various portions of the city, in order that the public should be informed of existing conditions and the means of remedying them. It was not many weeks before the people were thoroughly aroused, and the great work which was accomplished was due to this fact more than any other. If one thinks over the matter it can be readily understood why such a course was so necessary. The conquest of disease rests upon the intelligence of the layman, for personal hygiene is most essential. The individual must further know that to be healthy, and to retain health, he must be surrounded by clean conditions. When he has come to this realization the passing of necessary ordinances and the continuance of the scientific portions of the work on a large scale become very easy.

The members of the State Board of Health are trying to do certain things, but they find that it is impossible for them to accomplish these ends single handed. They must have the hearty coöperation of the public in this great work, and without it their hands are tied. For these reasons the members of the State Board of Health have thought it wise to enlarge their monthly Bulletin, and to make it of real educational value.

In the present number, various diseases which menace the health of the public have been considered by physicians whom the State Board has selected as being especially capable in these various lines. Certain oriental diseases are described, which are particularly a direct danger to this coast, on account of our increasing trade with the Orient and the large number of immigrants who come to our country from its shores. Some of these diseases are of deep concern to the medical profession, and much is being written about them. An endeavor has been made to have these articles written from the popular standpoint, and to omit medical terms and phraseology. The editor and writers have been instructed to avoid making them appear as a "Family Medical Adviser," as the object of these papers is to give the layman some idea of the extent of medical knowledge concerning these various diseases, their occurrence in California, and what can be done to prevent them. Symptoms of these diseases have not been dwelt on to any extent, and only the briefest description of the diseases themselves has been given. In the presence of illness, attempts at self-treatment may prove extremely dangerous. There is but one thing to be done at such times,—call in the family doctor. Only those who have received long and continued training in medicine are able to cope with this complex subject, and even to the most experienced the tack is often trying and difficult.

There is one other thing in which the family can be of inestimable service to the State. After calling in the doctor they may make sure that he does his duty by promptly notifying the local Health Officer of his diagnosis and arrangements for the protection of the public. The State Board of Health stands ready to aid all county and local health officers in their work through laboratory and field investigations of all diseases which endanger the public health.

THE CANCER PROBLEM.

By Andrew Stewart Lobingier, M.D., Los Angeles.

Cancer has been for generations one of the great problems of medicine. Fortunes have been expended in the investigation of its cause, prevention and cure. Enormous endowments have been provided in recent years by the philanthropic rich and by the leading governments of the world for the pursuit of these investigations along the most modern and exhaustive scientific lines. The ablest talent has been engaged for these studies, and nothing is spared to hasten the day when we shall know what causes cancer and how to combat it. Notwithstanding these intensely organized researches, as yet only a few new facts have been learned; but their importance in the ultimate solution of the problem is very great.

It is widely accepted that cancer should be classed with the infectious new growths. Tumors have been again and again grown from inoculations in mice. So far, such inoculations are found to be inert in the human subject. What the entity is that produces these tumors or gives rise to cancer can scarcely be named as yet. Various beliefs,—we may call them theories,— have been advanced, but none of them has unquestioned acceptance, beyond the general conviction that it is some germ which thus far has eluded detection. The view that this entity is parasitic is held by but few. It is probable we shall soon know its precise character.

We know that cancer is a local disease; that it resembles the tissue from which it springs; that some stimulus causes these cells to grow without order or limit until they form a mass which is called a tumor. That from this tumor, which is at first local, the cancer cells or infection become disseminated through the lymph channels to the lymph glands, to the liver and other gland structures in remote portions of the body. And we know that when this dissemination becomes general the disease is beyond all help or remedy.

Among the contributory influences predisposing a subject to cancer infection *heredity* has long held a prominent place. It may sound somewhat startling, but there are growing fewer authorities who find any foundation for the belief that heredity is a factor in the development of this disease. It will be remembered that the history of tuberculosis and its cause passed through this phase of discussion. There are few to-day who would attribute to such an influence an infection now so well understood.

Irritation, either local to the part eventually infected, or from indigestion or poor assimilation, as a result of mental worry, has had a still more strongly entrenched place as a contributory influence in the production of cancerous growths. Instances are the rough pipe stem irritating the tongue or lips in "smokers' cancer"; cancer of the stomach from long standing acid indigestion or following ulcer of the stomach; the skin cancer of chimney sweeps, and cancer of the skin resulting from continual picking at a mole on the face or squeezing a pimple. While none of these influences may be regarded as more than slight contributory conditions favoring, in some way now unknown to us, the real infection resulting in malignancy, physicians have long known how closely connected they were with the growth of these tumors.

Cancer is observed chiefly among patients after the fortieth year; but an increasing number of cases are recorded between twenty and thirty. There are evidences that our highly differentiated civilization affords conditions which favor its development. Cancer belongs to what is known as the principal group of malignant tumors. The term "malignancy" may be considered its tendency to grow without limit, crowding aside or destroying the normal tissue and ultimately destroying life. But death is not due wholly to the unlimited growth and development of these malignant cells; as the tumor grows, certain vital degenerative changes occur in the organs not directly involved by the growth, and certain chemical changes occur in the blood and lymph which are retrograde and lead rapidly to death. At first it is purely a local change; later, through dissemination of the entity, which causes these cells to take on abnormal growth, the cancer "spreads" to remote portions of the body, as has been said, and is then, by any means now known to us, incurable. Seen early while local, it may be wholly removed by operation and the life of the patient indefinitely prolonged. Seen later, when dissemination occurs, nothing but palliative measures can be offered to relieve the patient's suffering, and still less to stay the fatal progress of the disease.

Cancer is at once and always a surgical condition. It is never to be temporized with. Nothing known to us offers any hope of cure save early diagnosis and prompt and radical removal with the knife. In superficially situated growths, the region of the scar left after operation should be treated by the X-ray.

Treatment by caustic pastes should be severely condemned. With scarcely an exception they only spread the disease and cause it to grow more virulently. Such treatment is intensely painful and the resort of charlatans.

It would seem only right and proper that until we know exactly what the cause of cancer is, and how not only to prevent the tumor from growing after the diagnosis has been made, but, if possible, how to prevent the infection itself from taking place, the people should be informed as far as possible as to the earliest evidence of cancerous development, no matter in what portion of the body it may occur. This may at first thought seem to be a very easy problem, but those who have spent years in the practice of medicine and surgery realize only too well the difficulties surrounding such precise knowledge. Many who might be instructed in these early evidences of cancer development look lightly on a very grave matter, and are prone to believe the doctor is influenced by some self-interest in trying to frighten them into, well, at least a laboratory investigation,—to ascertain whether the ulcer or growth is really cancer or not. Others are kept in a state of constant worry or alarm, lest anything and everything which may bear even the most remote resemblance to a beginning cancer is really the real thing or not. Now, it should be remembered that there is a sensible and middle ground to be taken by every one in such a question. If a patient should have a stubborn ulcer of the tongue or lip or skin, which after several months of careful treatment does not heal but continues to enlarge, it would be a perfectly reasonable thing to do to have the family physician take away a small section of the base of the ulcer, and have a competent microscopic examination made of it to determine its exact nature. It should always be remembered in this connection that cancer is only one of several varieties of infection which may occur in these situations, and the microscope, in competent and experienced hands, will usually reveal exactly the nature of the ulceration. If there should be doubt, there are other tests or ''reactions'' understood by the physician, which, if given, will reveal whether or not it may be one of the other types of ulceration, and thus by ''exclusion'' considerable aid can be obtained in those obscure cases where the microscope does not reveal an absolutely definite picture.

But in the case of small tumors beginning to grow in the female breast, or in the superficial glands of the neck, the microscope is as a rule absolute. No time should be lost in having these growths examined as soon as the patient discovers them. No woman can be sure that a small growth in her breast,—even so small as a hazelnut,—is not a beginning cancer. To ''wait a little and watch it develop'' is, to put it mildly, worse than foolhardy. Many women conceal the fact that such a growth exists, or that hemorrhage continues between the periods, thinking the tumor will go away or the hemorrhage cease. How often this fatuous belief has put the poor patient beyond all surgical remedy, physicians only too well know. It is one of the saddest pictures in professional experience.

It should be remembered that every growth in the breast of a woman between twenty-five and sixty is not necessarily cancerous; or that every instance of bleeding between the periods is evidence of beginning cancer; but only the physician is competent to pass on these matters and no time should be wasted before consulting him.

Finally, a word about the false and fatally cruel promises of ''cancer cure'' quacks and fakirs: It ought to be plain to the people that in the present state of our knowledge, with millions being expended everywhere, and the exhaustive labors of the ablest talent in the world all striving for the knowledge which shall enable us to know the cause of cancer and how to prevent or cure it,—it ought to be clear to the people everywhere, that if any one can obtain this knowledge it is the talented physicians and investigators who are doing this work,—not ignorant and illiterate charlatans who have nothing with which to attract notice but their glaringly false and impossible promises. It ought not to be necessary to more than state these facts, so clear and self-evident are they, to have every person with a moderate degree of common sense appreciate their reasonableness and truth. We know that taken early, if the cancer is small and limited and cut out with a wide margin, there is good hope that it will not return. If it is situated superficially, as in the skin, and the X-ray is used intelligently on the scar after the wound heals, the return of the cancer is rendered still less likely. Therefore, all should know just how much can be done for these patients if radical removal of the affected part is done at the *very beginning* of the formation of the new growth. Even in our present knowledge these unfortunate subjects are not without hope of at least indefinite prolongation of their lives, in many cases actual cure,—if their cases have reached the surgeon at the very inception of the trouble.

He who promises more than this at the present stage of our knowledge is offering false hopes and is not to be depended upon.

ACUTE POLIOMYELITIS.

By F. F. Gundrum, M.D., Special Officer in Charge Poliomyelitis Investigation, California State Board of Health.

Acute anterior poliomyelitis, sometimes called infantile spinal paralysis, is an acute disease usually of children, although adults are not exempt. The illness is accompanied by fever, general indisposition, often intestinal disturbances, more or less nervousness, and pain in the head and neck, which condition continues two or three days, ordinarily, before the paralyses appear. The paralysis caused by the disease is much more common in the arms or legs, although paralyses of the facial and other muscles have occurred. The paralysis is asymmetrical, that is, not the same on the two sides, one arm or one leg frequently being much the most affected. The paralysis is greatest during the first few days after its appearance, and diminishes in severity and extent greatly during the half year following the sickness. The disease has received very marked attention and study in the past few years because of the fact that it is only within the last decade or two that large epidemics have occurred. It is not very definitely established just how old this malady is, and it is very probable that its existence is of a much greater antiquity than the reports in the literature have indicated. The first article, describing the disease in a clear and concise manner, was one by Dr. Heine, written in Germany in 1840. Three years later several cases were recognized by Dr. Colmer in Louisiana, and the records have gradually been accumulated from that time to the present. The first cases were few in number, and rather widely separated in time and place. The number of children attacked by the disease have apparently increased steadily, until at the present we have well authenticated records of the malady from every continent of the globe.

It was not until about fifteen years ago that an epidemic of acute anterior poliomyelitis occurred, in a civilized community at least, where its study could be carried out. This epidemic was in Norway in 1895, and the Scandinavian peninsula has suffered rather severely ever since; there have been rather large numbers of children attacked, and several well established epidemics have occurred. The disease is said, therefore, to be endemic in Norway; that is, it occurs in individuals without the appearance of a true epidemic, or widespread infection. Since 1895 there have been epidemics in other parts of Europe, notably France and Germany, and in America, particularly in the United States, which has suffered more than any other country of the western hemisphere. There have been several epidemics reported, and it is interesting to notice that following the epidemic in Sweden in 1909, there was an epidemic in the cities of Boston and New York, also in Minnesota, where a large part of our Scandinavian immigration finds a home. The history of the disease in California has not been very well cleared up; it is probable that it has been in the State for several years at least. The disease has never been made reportable to the State Board of Health, and for that reason records in the office can not be considered an adequate criterion for the number and severity of the cases that have occurred. Dr. W. A. Sawyer, who has charge of the State Laboratory in Berkeley, has been particularly interested in this phase of the situation, and has been investigating along lines tending to show the presence of poliomyelitis in California for a good many years. His work will be reported in a later number of the Bulletin.

During the past summer there has been an outbreak of considerable severity in this State, by far the greater number of cases occurring in the central portion, about Stockton, Sacramento, and the bay, San Francisco in particular suffering quite severely. Following the rather sudden appearance of a large number of cases of the disease in the State, the Board of Health appointed me deputy to investigate the conditions and circumstances under which the children were attacked, with the idea of determining, if possible, some definite information concerning the method of transmission of the disease. Through the kindness of the doctors who have had these patients in charge, it has been possible to see a large number of the children, and to study in detail and on the ground the manner of life, food supply, sanitation and exposure to other similar cases. All cases seem to have occurred in the summer, during the hot, dry weather, and this is typical of the malady, which practically never occurs during the winter or severe cold weather. The children have nearly all felt cross, and have had more or less fever, loss of appetite, resembling one of ordinary disturbances of children, so that frequently the paralysis itself would be the first thing to bring the attention of the parents to the fact that the child was suffering from a serious disease. There have been many children in contact with the sufferers, and with the possible exception of one family group near Sheldon it has been impossible to prove that one child has contracted the disease from another. These field observations do not by any means prove, however, that the disease is not transmissible, but they only indicate that it is of a considerably less contagiousness than the ordinary diseases of childhood, such as scarlet fever or measles, where, with so great exposure, it is quite certain that other children of the family would have become ill. A history of a curious disease of domestic animals associated with the paralyses of children of a family afflicted with poliomyelitis was found in Stockton, a colt having been paralyzed about the time of the outbreak of the severest epidemic among the children. In Petaluma, in a case seen with Dr. Lumsden, the family fox terrier and pet of the baby's was paralyzed in both legs for several days, about three weeks prior to the onset of the illness of the child. In a case seen by Dr. Ward of Oak Park, the most interesting series of events obtained. There were five children in the family. About the middle of May one of the chickens was weak and unable to move about much; this chicken was cared for by one of the boys, aged four. Following the paralysis of the first chicken, several others were affected, and on the Fourth of July the boy contracted poliomyelitis, with paralyses of both legs, fortunately recovering. No other children of the family were attacked. These cases are particularly interesting, and the State Board is anxious to obtain some of the domestic animals with acute paralyses, in order to study and establish, if possible, whether or not there is a casual relation between the disease of domestic animals and those of children. It is a well known fact that the ground squirrels have plague, and many other instances can be cited in which animals suffer from diseases communicable to man, making the investigation of the diseases of domestic animals extremely important, more especially in acute anterior poliomyelitis, because the manner of transmission is as yet unsettled, and it is only through the close study of methods of transmission that we shall be able to prevent this dreadful malady among the children.

If anybody in the State possesses an animal which has been recently paralyzed, the State Board will consider it a great favor if a communication is sent concerning the matter. Contrary to the experience with other diseases, such as typhoid fever, the city or country life has apparently not much influence, and the children of the well-to-do families living in excellent sanitary surroundings have frequently been afflicted, as well as those of the poor and careless. The pathological investigations in the laboratory, carried out particularly in the Rockefeller institution, make it highly probable that the illness is due to some sort of a living virus; but it has not been determined from whence the virus comes, or under what circumstances it may be transmitted from one child to another. The paralysis, itself, is rather the aftermath of the actual disease, than the disease itself, and it is comparable to the well known "pits" of smallpox, which endure through life, a lasting evidence of the ravages of the disease. It is due to a scarring and destruction of the spinal cord, and, in part, at least, is a memento of the disease. This point was particularly brought up in a central California county, where considerable local feeling was engendered over the isolation of a child afflicted with poliomyelitis, the idea being that as long as the paralysis remained there was an opportunity for contagion. This idea, of course, arose only through the failure of the people to appreciate the true state of affairs and to realize that after the fever had been gone for a few days the disease was over, leaving behind it paralyses, as stated above. When we consider the fact that after a child has once contracted the disease there is at present no known method of preventing a paralysis of greater or less severity occurring, it seems manifest that our point of attack must be preventive. To prevent we must first know definitely the means and agencies by which the malady or virus comes to the patient. This knowledge is not yet at hand, but the State Board is actively engaged in gathering statistics of all available cases for more extended study with that end in view. Any information concerning acute poliomyelitis from any source in the State will be welcomed by the Board. Blank report sheets have been prepared, and will be gladly furnished on application, in order that all case reports may be uniform and contain the special information concerning epidemiological factors so much desired by the Board at present. All communications should be addressed to the Secretary, California State Board of Health, Sacramento, California.

INFANTILE SPINAL PARALYSIS (ACUTE ANTERIOR POLIOMYELITIS).

By MILTON E. LENNON, M.D., Chairman Committee on Acute Anterior Poliomyelitis,
San Francisco County Medical Society.

Within the past few months the frequent occurrence in this State of acute anterior poliomyelitis has given rise to the suspicion that we are in the midst of a mild epidemic. While no statistics are obtainable on the subject, the frequency with which the disease has been met with in San Francisco, the numerous reports from the cities and towns about the bay, and the number of patients with acute paralysis brought from interior counties, more than justify this suspicion.

Every Health Board in the State should make acute anterior poliomyelitis a reportable disease. Every case should be isolated. While not nearly so contagious as scarlet fever or diphtheria, the same sanitary regulations should be practiced as pertain in these diseases. Under certain unknown conditions it is probable that healthy persons may act as carriers. The very fact of its occurring in epidemic form is sufficient reason to forewarn and forearm us.

America has contributed much to our knowledge of the disease. Claverly's report of the epidemic in 1894, in the vicinity of Rutland, Vt., unquestionably was the most important early paper on the subject. One hundred and nineteen cases occurred during the summer; 85 were under six years of age; 18 died. Newmark reported a "Little Epidemic" in California in 1895. Within the last four years the disease has been so common in this country and in Europe that ample clinical and pathological material has been afforded for careful study. In 1907 over 2,500 cases occurred in New York; in 1909 Massachusetts had nearly 1,000 and Nebraska 619.

Our earlier experiences have been that the disease came like a wolf in the fold. Many studies, particularly those of Krause and Müller, indicate that this is an exceptional incident. There are usually prodromata. Thus Krause of Bonn found gastro-intestinal disturbances in 90 per cent of his cases, and was led to suspect that the disease gained ingress through the intestinal tract. Müller of Marburg in his 50 cases rarely noted this. There is much evidence to support the belief that healthy persons may carry the disease.

Both Krause and Müller distinguished two stages of the disease. These could be demonstrated in the greater number of patients observed. The first stage is that of prodromata; the second, the paralytic stage, and it is contended and well maintained, that in an epidemic it is possible, not only to make a diagnosis before the paralysis asserts itself, but to correctly classify those cases which never go on to paralysis.

We know of no example of a person suffering from two attacks of poliomyelitis. Krause found that children of two years were most susceptible to the disease. In The Hague epidemic the youngest patient was six weeks old and the oldest fifteen years of age. Up to October 15, 1909, 436 cases occurred in Westphalia, 66 of which terminated in death.

In conclusion, attention should be drawn to the faulty name of infantile spinal paralysis. We are dealing with an infectious disease, which attacks adults as well as infants, which may not be spinal in type and which may not go on to even a transient palsy. The investigations of

American, English and European scientists have proved these and many other points of minor importance. The recent work of Flexner and others has shown that the disease may be experimentally transferred to a monkey, and from this monkey to others. There is some reason to believe that this will lead to the discovery of a serum which will be as influential in reducing the number of deaths and permanent paralyses in this disease, as the meningitis serum has been in reducing the deaths from that disease.

PELLAGRA.

By William A. Clark, M.D., Superintendent Alameda County Hospital.

The recent discovery of a case of pellagra in the Alameda County Hospital has brought to the attention of the medical profession that another disease to which our State was thought to be immune is here. If damaged corn and its various products is to a large extent the cause of the disease, it is eminently proper that our people should know something of it and how to prevent it.

Pellagra is found in Europe, Asia, Africa, and North America, and more particularly in certain sections of those countries where it is therefore spoken of as being endemic. The skin eruption is the most characteristic feature of the disease, yet to the individual affected it is the least important. Usually before the disease is manifest vague pains are experienced, also attacks of diarrhea, vomiting, a burning sensation in the œsophagus and stomach with intense thirst and a change in the color of the mucous membranes of the mouth. This state of affairs usually lasts several months, until suddenly during one of the spring months the backs of the hands and possibly the neck, ears, face, chest and forearms appear to become severely sunburned. This apparent sunburn is out of all proportion to the intensity of the sun's rays at that period. The skin affected becomes swollen and frequently cracks and blisters. In about two weeks this condition subsides leaving the skin dry, wrinkled, and frequently stained a prune color. The individual may experience nothing more until the following spring, when he has another attack possibly more severe. These attacks succeed each other with annual regularity. Other symptoms, due to paralysis, which are most important, soon make their appearance and the patient begins ~~to~~ notice great muscular weakness and trouble in seeing correctly. He also becomes afflicted with what is commonly called palsy. The patient becomes "blue" and depressed, and even suffers from melancholia and paresis. It is estimated that about 10 per cent of these patients become insane.

One very peculiar and important feature of the disease is that, in contradistinction to most other eruptions, the purple staining of the skin, resulting from the "apparent sunburn of those having pellagra," persists after death and gives the affected parts the appearance of having been bruised. Those having relatives or friends in insane hospitals or almshouses should not be hasty in condemning the management of such institutions for apparent brutality, discovered after death in the appearance of the body, for it may be that the relative or friend was a victim of pellagra. Furthermore, since our attention has been called to the disease, we will undoubtedly discover that a considerable number of patients received in such institutions, who are supposed to be insane, will on closer observation possibly be found to have pellagra.

In conclusion, as most authorities believe that the poisons produced in corn by improperly curing and caring for it produce the disease, it behooves the producer to be careful of his products and the consumer to exercise discrimination in selection.

BERI-BERI.

By Creighton Wellman, M.D.

Professor of Tropical Diseases and Preventive Medicine in the Oakland College of Medicine; Secretary of the Society of Tropical Medicine and Hygiene.

I have been asked to prepare a short discussion of the disease known as beri-beri. This name is an old Aryan word, probably referring to the staggering gait peculiar to patients suffering from the disease it designates. The affection has been known in the Far East since ancient times, and is mentioned in Chinese literature as early as the second century. In Japan it is known as *kakke* or *ashite,* and in South America as *perneiras* or *inchacao.* The disease is distributed throughout the tropics, and has been reported from nearly all our American possessions, namely, the West Indies, the Canal Zone, Hawaii and the Philippines. This, of course, renders the study of the affection both interesting and necessary to us, for beri-beri is not infrequently reported from North American seaports and occasionally in crowded institutions in our own and other temperate countries. The disease is constantly being introduced into the port of London, England, and I have seen many cases in the Seamen's Hospitals there. I have also seen cases in San Francisco and Oakland.

Beri-beri is an endemic or sometimes epidemic disease of uncertain nature, most remarkable for its constant involvment of the nervous system, including actual inflammation of the nerve trunks, with accompanying paralysis, muscular wasting, heart disturbances, and consequent dropsy.

The question of the cause of beri-beri is not yet settled. Many theories have been put forth, among which we may mention the ideas that it is due to arsenical poisoning, diet of bad fish, improperly prepared rice, animal parasites in the blood or intestines, bacteria in the blood, fat starvation, nitrogen starvation, impoverishment of the blood, miasma, inflammation of the upper small intestine, etc. Lately, the rice theory in a slightly altered form is being revived again. I have seen thousands of cases in a country where not a pound of rice is eaten. From the facts of its curiously exact distribution and seasonal prevalence and that it attacks strong, well-nourished adults by preference, it would seem probable that beri-beri will turn out to be an infectious disease.

While causing tremendous mortality under ordinary conditions, beri-beri is also a great scourge of armies. In the Chino-Japanese war, for example, in 1904-5 there were 97,572 new cases of beri-beri as against 9,722 cases of enteric fever.

The onset of the disease is marked by ill defined symptoms, but when the partial paralysis, wasting of the muscles, or dropsy sets in, the recognition is not difficult. Sporadic cases are of course hard to diagnose. Newcomers in the tropics usually pronounce cases to be those of diseases known at home, such as locomotor ataxia, rheumatism, heart disease, etc. The symptoms are protean, as would be expected from the nature of the disease. Among the most striking I may name the paralysis, which may be mild or complete. The lighter cases exhibit a unique walk which has been compared to a man wading in deep mud. Contraction of the calf muscles is common and palpitation of the heart is often complained of. The dropsy has already been mentioned.

The diagnosis is not difficult where the disease is known or suspected to exist. The cardinal points to be looked for are loss of sensation in limited areas on the limbs, the peculiar walk, sensitiveness of the calves and muscles of the lower back to deep pressure, absence or exaggeration of knee jerk, the heart disturbances, swelling over the shins, etc.

The disease may be considered as having several symptomatic types. One of these is the so-called rudimentary or mild form, where the signs of the disease are vague and relapses common. Another is the wasting form or "dry" beri-beri. Again, we have the dropsical or "wet" form. In this the heart insufficiency and consequent dropsy overshadow the other manifestations, although the wasting and paralysis are also present. "Mixed" forms, or combinations of the last two, are also described. Finally, we have what is known as acute or pernicious beri-beri, which is often fatal from paralysis of the heart muscle. The sequels of beri-beri are both numerous and grave. In some epidemics the mortality is as high as 30 per cent.

The treatment of beri-beri is very unsatisfactory, and is usually confined to combating the dangerous symptoms and to good sick room care of the patient. It is in the prevention of the disease that we are able to accomplish the most. Under the efficient leadership of Baron Takaki beri-beri, formerly rife, has been practically ousted from the Japanese navy. Cleanliness and good hygiene in other particulars are here as potent as elsewhere. But in order to apply effective measures we must have expert knowledge in detecting the first approach of the disease, and unceasing vigilance in looking for imported cases. Physicians should report all cases occurring in their practice to the State Board of Health, and even suspicious cases not definitely diagnosed should be reported. While the danger does not seem to be great, still we should be in constant readiness to begin a campaign against the disease. It is always wiser and easier to prevent than to remedy, and it is better to expend a little effort in advance than to be forced to expend much as a penalty for negligence.

THE MENACE OF PLAGUE IN GROUND SQUIRRELS.

By Passed Assistant Surgeon A. J. McLaughlin, United States Public Health and Marine Hospital Service.

Bubonic plague as a rat disease is well known and its danger to the human race appreciated. The occurrence of this disease in other rodents, and especially in the ground squirrel, is undoubted, but knowledge of its existence is less widespread, and its danger is not generally appreciated.

Plague has been demonstrated in ground squirrels from Contra Costa, Alameda, Santa Clara, San Benito, San Joaquin, Merced, Stanislaus, Santa Cruz, San Luis Obispo, Monterey, and Los Angeles counties. The disease presents the characteristic lesions of plague as found in rats and man, and its mode of transmission is by means of the flea. Scientifically the fleas which infest rats, squirrels, man, and other animals are differentiated and classified, yet experiments prove that rat fleas will bite a squirrel, that squirrel fleas will bite rats, and that both will feed upon man.

Plague in squirrels has been demonstrated in Siberia, northern Mongolia and India. In Siberia and Mongolia in the *tarbagan,* a rodent slightly larger than and closely related to our eastern hedgehog. In India the *Sciurus palmarum,* a gray-striped squirrel, seen commonly about the gardens and verandas of habitations, has been found infected with plague. America is richest in *Arctomyinae* (ground squirrels) and with their relatives the prairie dog of the plains and the hedgehog of the Eastern States, these rodents may be said to cover territory from the Pacific to the Atlantic.

In August, 1903, a blacksmith from the town of Pacheco, Contra Costa County, was admitted to the German Hospital in San Francisco suffering from plague, from which he subsequently died. While investigating his case Surgeon Rupert Blue was struck with the fact that the patient had shot ground squirrels three or four days prior to his illness. Inasmuch as he had not visited Oakland or San Francisco, which were then infected points, for over a month prior to his taking sick, it was evident that the infection had been contracted in Contra Costa County, and it was thought not improbable that the ground squirrel was the agent concerned in the transmission of the infection. In September of the same year a man employed in the construction of a railroad bridge near Danville died of bubonic plague in the Southern Pacific Hospital in San Francisco. He had been working for some time in San Ramon Valley and had lived in a railroad camp where ground squirrels were frequently killed and used as articles of food.

In 1904 a woman living near Concord, California, died of the disease, and in the investigation which followed Passed Assistant Surgeon Donald H. Currie made a series of experiments which proved conclusively the susceptibility of the ground squirrel to bubonic plague. No suspicious cases were reported during the summer of 1904 or 1905, but in 1907, immediately after the earthquake, Doctor Blue saw a boy suffering from bubonic plague of the multiple bubonic type. This patient had shot squirrels in the Strawberry Canyon in the Berkeley hills, adjoining Contra Costa County, three or four days before he was taken ill. He stated that in several instances he was obliged to thrust his arm down in the squirrel burrow in order to extract the animal he had shot. It is quite easy to see how in this way he may have been bitten by a flea infected with plague. He recovered.

On July 15, 1908, a boy living on a ranch in the northern part of the county, about midway between Concord and Antioch, died of the disease, and on July 28th a young lady died of the disease at the head of the Pinole Canyon (usually called Briones Valley), midway between Martinez and Pinole. In both these latter cases an intimate association with ground squirrels was shown.

In 1903, while investigating the case of the blacksmith in Pacheco, Doctor Blue pointed out the possibility of the ground squirrel acting in the same rôle as the rat in the transmision of the disease. Doctor

Currie's investigations served to confirm him in this belief, and in 1908, in the investigation which followed the two human cases mentioned above, natural plague in ground squirrels was demonstrated.

Since that time infected ground squirrels have been frequently found, and during the fiscal year ended June 30, 1910, 385 plague infected squirrels were found from the following named counties: Alameda, San Joaquin, Santa Clara, Santa Cruz, Monterey, Contra Costa, Stanislaus, San Benito, Merced, San Luis Obispo.

There is great danger of human cases of plague being overlooked, when the diagnostician is not looking for plague, and the diagnosis of plague where the symptoms are light, indicates diagnostic acumen above the ordinary. A young lady in a neighboring county was taken ill with fever, and after a few days had some swelling and tenderness of the inguinal glands. A surgeon was called in and was nonplused at first, because of inability to find any cause for the adenitis. He decided to operate. In operating his suspicions were aroused by the character of the enlarged glands. They did not resemble enlarged glands due to well known causes, and he asked Surgeon Rupert Blue's assistance in determining the exciting cause. The plague bacillus was isolated from the glands and its identity proved beyond question by animal experiments. The history in this case was negative as to contact with squirrels. Investigation, however, revealed the fact that the young lady rode habitually over a country from which plague infected squirrels are frequently received, and, further, she admitted having visited the hay fields with her father. This case illustrates a shrewd diagnosis by the attending surgeon and the ease with which human cases may occur at any time in the infected counties. Physicians in these counties should look with suspicion upon any sudden fever of obscure origin, and if in addition there is glandular enlargement or tenderness appearing after the onset of the fever the presence of plague should be suspected.

In considering the question of squirrel plague, three special dangers suggest themselves—

First—Infection of human beings from squirrel fleas.

Second—Spread of disease from ground squirrels to allied species all over the continent.

Third—Reinfection of the rat population of our large cities.

Human cases from plague-infected squirrel fleas will probably never reach epidemic proportions because of the limited opportunity for contact between man and the squirrel fleas. However, these cases will occur from time to time, and it must be remembered that it is not necessary for man to come in actual contact with an infected ground squirrel, but the infected fleas may be carried to him in various ways. Infected squirrel fleas may be carried from the fields by dogs or other animals or in bales of hay or other ways. It will be readily understood that a light case of plague might be overlooked if the practitioner were less painstaking and shrewd than the gentleman referred to above.

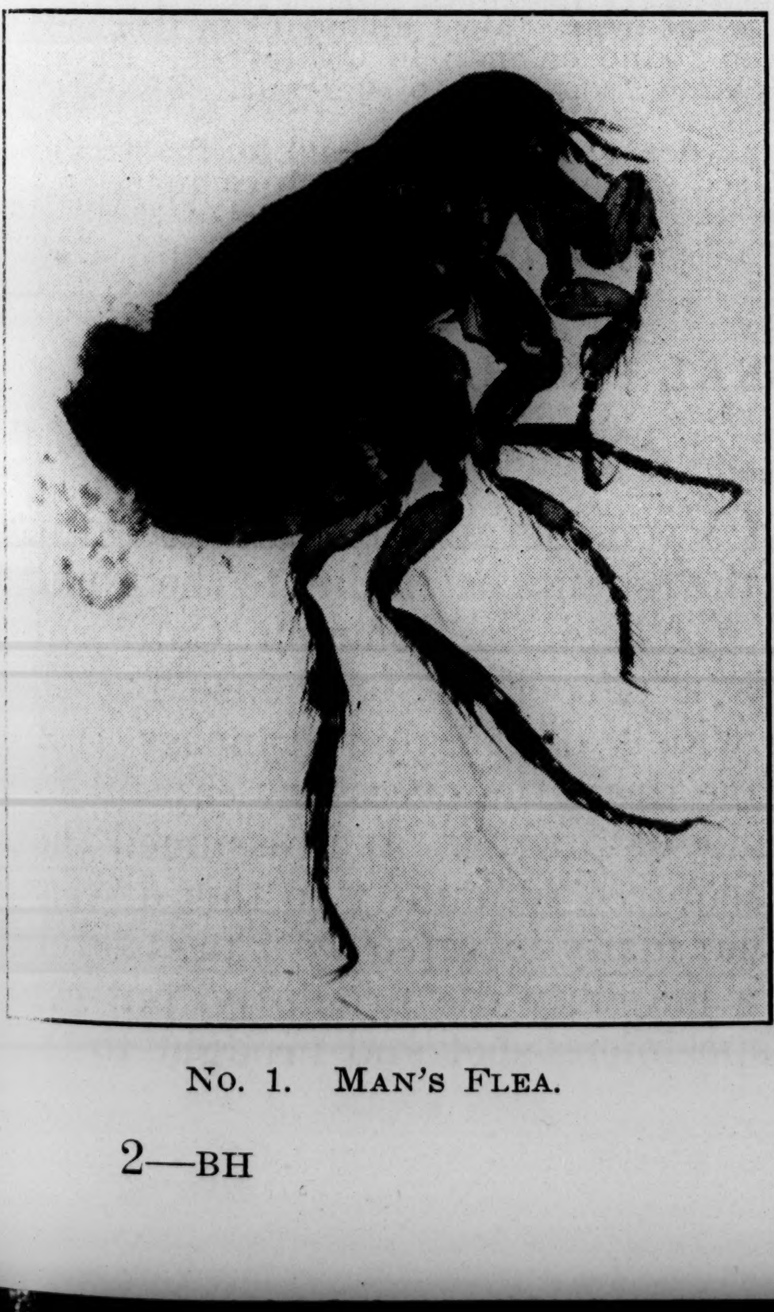
Plague in ground squirrels suggests the possibility that these animals furnish the host necessary in keeping alive the infection during periods of quiescence when the disease is not found in either rats or man. Its spread from one rodent to another threatens to establish a permanent endemic focus of the disease in America, considering the widespread existence of the *Arctomyinae* and other rodents.

Reinfection of the rat population of our large cities is the greatest of the three dangers. Men infected through squirrel hunting may transfer infection either by carrying infected squirrel fleas to man or rats, or being infected, his infected human fleas may transfer infection to rats. The human flea, *Pulex irritans,* has been found in considerable numbers on rats (*Musnorwegicus*) on both sides of San Francisco Bay. There is also absolute proof that squirrel fleas are found and feed upon rats and man. The close relation between rats and ground squirrels in certain localities is well known. Ranchers have noted that in harvest time Norway rats immigrate into the fields and may be seen running in and out of squirrel holes. By placing traps in ground squirrel holes in the Berkeley hills, more Norway rats were caught than any other species of rodents.

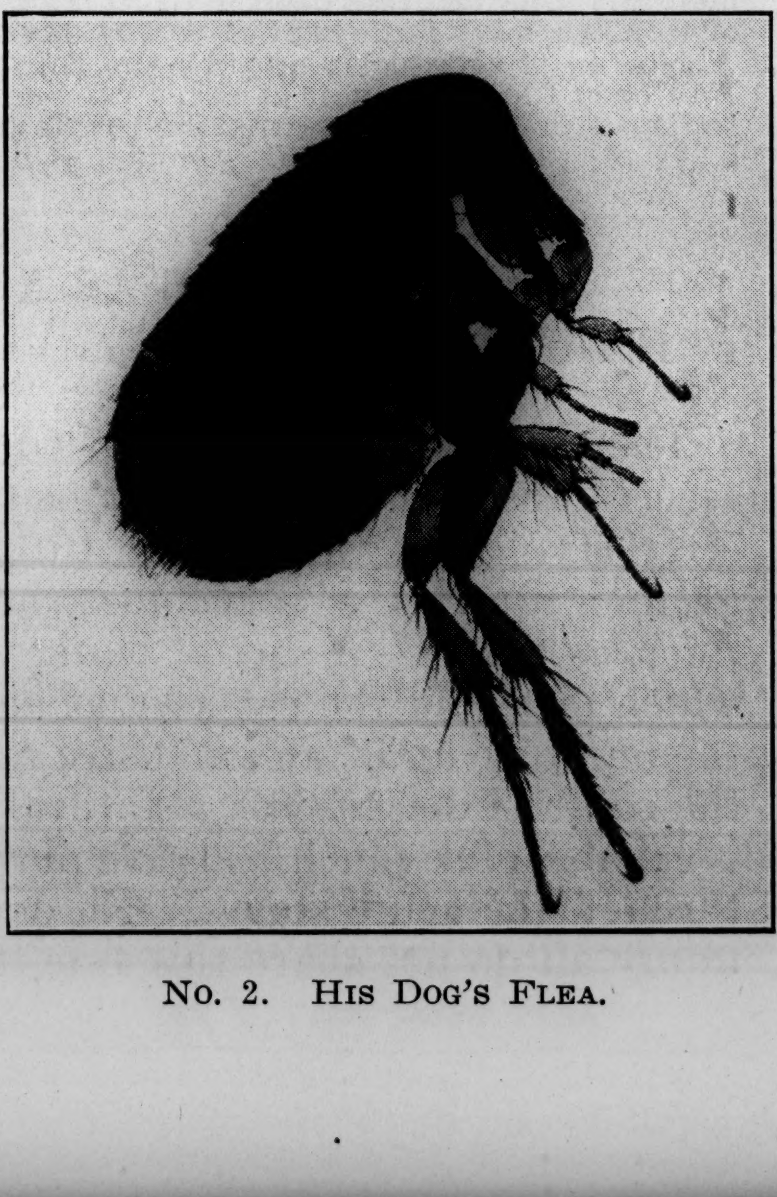
The absolute necessity for the eradication of the ground squirrel must be apparant to any one conversant with the facts. As indicated above, it is necessary to prevent the sporadic cases of plague which occur from time to time in the infected counties due to more or less direct contact with infected ground squirrels. It is necessary to eliminate what threatens to be a permanent endemic focus of bubonic plague in America. But squirrel destruction is of paramount importance because of the danger of reinfecting the rat population of our cities and again producing human plague in epidemic form. The possibility of such a calamity, with its attendant evils of loss of life and interference with commerce, should be avoided and can only be avoided by a systematic campaign having for its object the complete eradication of the ground squirrel.

THE FLEA.

The illustrations below demonstrate that all fleas look alike to most of us, simply because we do not study them. There are as many evidences of individuality among the members of the flea family as among members of the human family. The human flea (*Pulex Irritans,* No. 1 below) probably does not serve as the carrier of plague to man except in rare instances, although experimentally it has been proved capable of doing so. The same thing is probably true of the cat and dog flea (*Ctenocephalus canis,* No. 2 below). The common rat flea

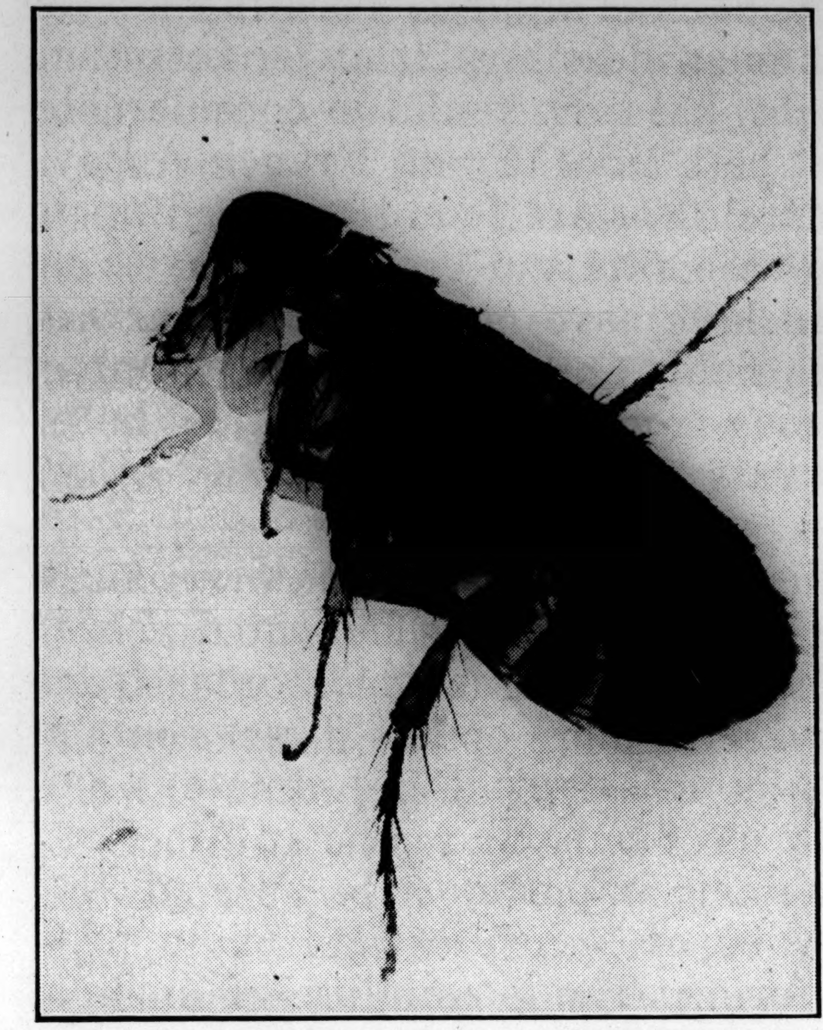


No. 1. Man's Flea.

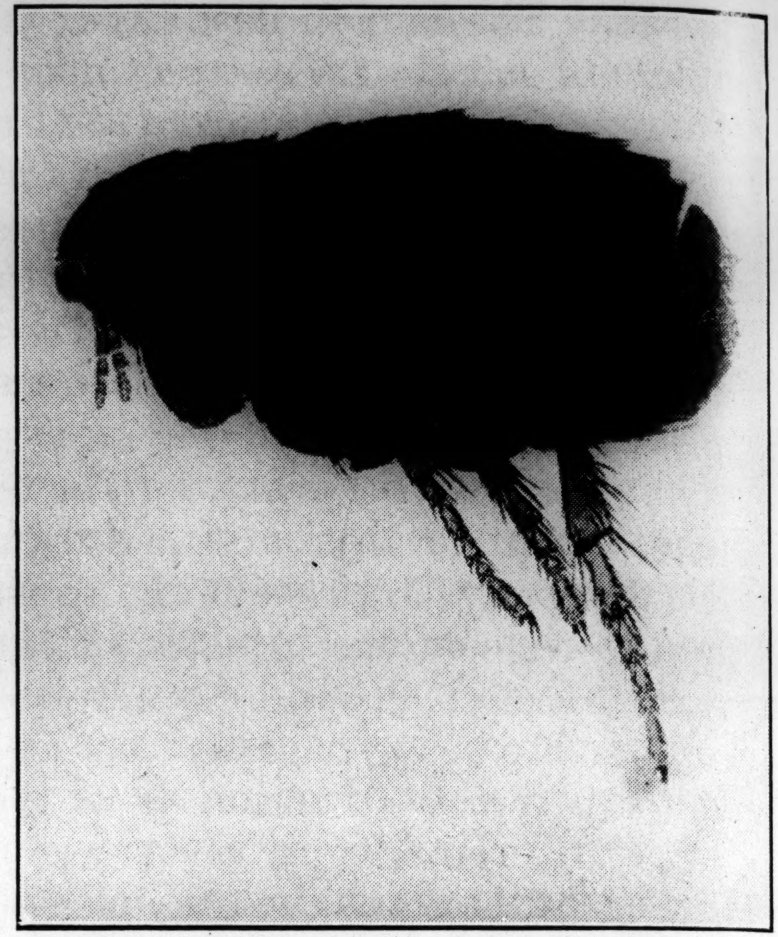


No. 2. His Dog's Flea.

of temperate climates (*Pulex Ceratophyllus fasciatus*, No. 3 below) seems better adapted for some reason to the needs of the plague bacillus. It is the rat flea which is most abundant in California towns, and was probably the chief agent in spreading plague among human victims in San Francisco. The rat flea of tropical countries, commonly known as the "plague flea of India" (*Pulex pallidus vel cheopis*, No. 4 above), is the one chiefly concerned in the transmission of plague throughout the infected warm countries.



No. 3. Plague Flea of California.



No. 4. Plague Flea of India.

No. 1. *Pulex irritans.*—The human flea of all climates. Often found on domestic animals, and is able to live with difficulty for a short time on rats and squirrels.

Laboratory experiments have shown that this flea can jump vertically 7¾ inches, and horizontally on wood 12 inches. The life cycle of this flea in California is approximately as follows: Egg stage, 8 days; larva, 30 days; pupa, 32 days; adult life in captivity, 4 to 6 weeks.

No. 2. *Ctenocephalus canis* (Curtis).—The dog and cat flea of all climates. Often found on man in California. It is the intermediary host of the *Cysticercus* of tapeworm (as in the case of *Dipylidium caninum*), but has been found unadapted to the transmission of plague in laboratory experiments.

No. 3. *Ceratophyllus fasciatus.*—One of the rat fleas. Most abundant in temperate climates on the common brown rat. Has been found on man in California. Experimentally this flea has been used to transmit plague from rats to squirrels. Specimens of this flea have been kept alive 104 days.

No. 4. *Pulex vel cheopis.*—One of the rat fleas. Most abundant in the tropics. Has been found on man in San Francisco. Used extensively by British commission in India to prove the transmission of plague by the flea. A flea may take as many as 5,000 plague germs into its stomach at one feeding upon a plague rat.

PLAGUE AS A RURAL PROBLEM.

By Passed Assistant Surgeon Friench Simpson, Public Health and Marine-Hospital Service.

The theory has been advanced, and a consideration of the literature seems to bear out the deductions that the rodents belonging to the family *Arctomyinæ*, of which the *Citellus beecheyi*, or common California ground squirrel is a member, acts as a perpetual storehouse for the *Bacillus pestis*. A sort of bank, with widely distributed branches, from which man and the rat may at any time draw the necessary capital for the building up of an extensive epidemic of plague. It is assumed that the squirrel, because of a natural or acquired immunity to this disease, is capable of so much resistive power that many infected by it pass safely through the acute stages. No doubt a majority die promptly, but certainly all do not share this fate, for specimens shot and brought to the post-mortem room for examination frequently show the disease in an extremely chronic stage. Often are found lesions of the disease passing into the stage of healing from which the animal would subsequently recover fully. This chronicity is not to be assumed the result of some mild form of the disease, or the result of an attenuation of the bacillus, although occasional cases are met with, but rather to an immunity present in the squirrel enabling him to resist an infection of maximum intensity.

That this fact is true has been amply proven by the inoculation of other animals with bacilli from the tissues of such chronically infected animals, with the result that these other animals promptly died within the usual time limit and with the usual chain of symptoms occurring in acute cases. The presence of the disease in chronic form will explain with reasonable certainty how such a squirrel may for a long period of time harbor the disease and finally convey it to some associated animal, which may in turn suffer in the same way. It is in this manner the disease is believed to be perpetuated.

Plague occurring in such squirrel villages, not in continuous and direct contact with man, might be present for long periods of time, and remain a latent danger, slowly spreading from squirrel to squirrel, and gradually extending over wider areas of country, awaiting only the opportunity for transmission to man or the rat. When this does occur the origin of the infection may be overlooked, and if it has been transmitted to the rat population, may, unnoticed, slowly spread among them, to be followed by an explosive epidemic in man, without recognizable source, and difficult of control.

The appearance of the disease in man occasions immediate action. Human cases are isolated, premises are disinfected, and a costly campaign of rat eradication inaugurated for the destruction of the rodents directly responsible for the infection. But the original focus—the squirrel—is overlooked and undisturbed, and continues a virulent source of danger, awaiting only the necessary contact and means of transmission for a future epidemic.

The origin of the epidemic of 1908 could not be traced to its source; it was presumed to be the result of importation of the disease from some foreign country, but in the light of our present knowledge, that plague exists among the ground squirrels of ten counties, and has been slowly spreading for as many years, it may be assumed with as much reason, that this epidemic resulted from a reintroduction of the disease from contact with and infection by these ground squirrels. This is rendered all the more plausible when it is remembered that the ground squirrel had been for many years shot by market hunters, conveyed, its fleas included, into the bay cities, and there exposed for sale in the open markets.

While market hunting has been stopped and importation prohibited, there remain other recognized means of transmission; squirrels frequently live in direct association with rats; cattle or other animals may convey fleas from infested squirrel-villages to dairies and barns, or man himself may act in the same way when passing through such villages. Again, unrecognized methods for the transmission of fleas from the homes of the squirrel to the abode of man probably exist, and the statement may be positively made that communities harboring infected squirrels are constantly menaced by this endemically present infection, requiring only the proper means of flea transmission for the lighting up of an epidemic.

Naturally it will occur, how far does this infected zone extend? This will be answered by the United States Public Health and Marine-Hospital Service, now engaged in determining the extent of this infected area, which has already been shown to include the following counties, viz.: Alameda, San Joaquin, Santa Clara, Santa Cruz, Monterey, Contra Costa, Stanislaus, San Benito, Merced, San Luis Obispo. From each positively proven cases of plague in ground squirrels have been obtained, and future work will likely extend this zone.

It follows, then, that safety can come only after the complete eradication of the squirrel, and each year of delay permits a wider spread of the disease, increases the cost of the undertaking, and needlessly exposes to plague all communities lying within the infected zone.

HOOKWORM DISEASE.

By Herbert Gunn, M.D.

Special Officer in Charge of Uncinariasis Investigations, California State Board of Health.

Hookworm disease, known also as uncinariasis, ankylostomiasis, miners' anemia, Egyptian chlorosis, tunnel disease, etc., is produced by a small worm which is found in the small intestines. Two species of this parasite are known to occur in man, *Ankytostoma duodenale* and *necator Americanus,* the latter being the variety most usually observed in the United States.

The disease is characterized by anemia, digestive disturbances, weakness, and, in the young, lack of development. Its course is chronic, and a fatal termination may occur. The hookworm was first observed in man by Dubini, an Italian, in 1838, since which time it has been recognized in practically all parts of the tropical world and in many temperate regions. The enormous importance of this parasite, as a cause of disease, has been generally appreciated only in the last few years.

In 1853 it was shown by Bilharz that the hookworm was the cause of the Egyptian anemia, or chlorosis, which was accountable for about 25 per cent of the mortality. Over twenty years later it was found that the brickmakers' anemia of Italy, a disease which had prevailed for many years there, was due to this cause. A severe outbreak occurred during the construction of the St. Gothard tunnel, the disease being spread by imported Italian laborers who were infected. Miners' anemia, supposed to be due to peculiar conditions obtaining in the mines, was next found to be caused by the hookworm, and mines of France, Hungary, Germany, and England were found to be infected. The employment of laborers harboring hookworms, the lack of sanitary appliances and the consequent contamination of the soil in the workings with excreta, were the causes of the infection of the mines in Westphalia; many of the mines harbor the disease and very stringent measures have been adopted for the control of this pest. At one time there were as many as 25,000 cases. Sanitary appliances were installed and infected miners were not allowed to reënter the workings until after they had been cured of the disease.

All measures to eradicate the infection from the mines have thus far proved futile, so that the men have to be regularly examined and treated as often as they become infected. However, these measures have reduced the number of infected individuals very materially, and the cases that do occur are placed early under treatment, so that serious symptoms have not time to develop.

In a mine in Cornwall it was found in 1902 that practically every one working in it had hookworm infection. The general efficiency of the laborers was thus greatly reduced. By the installation of sanitary appliances in the mine and by treating the cases until they were apparently well before permitting them to return to the workings, the general conditions were greatly improved. In 1908, about six years after measures had been adopted to control the disease, it was found that about 75 per cent of the men were still infected, though practically none were incapacitated from work on that account, the infections being slight, as any one showing evidence of the disease had been immediately placed under treatment.

From what has been said, it will be readily seen that the infection of a mine with hookworms is a very serious matter from an economic as well as a health standpoint. The larvæ of the hookworm live for a long time, perhaps years, under favorable conditions, and the heat and moist earth of some mines produce an ideal environment. The miners become infected through the skin of the feet, where defective boots are worn, and even possibly through an intact boot when it is thoroughly soaked. Doubtless also infection occurs through the hands.

Hookworm disease is found in all of our tropical possessions; in Porto Rico it has been estimated that 90 per cent of the rural population is infected, and that 30 per cent of the deaths on that island are due to it. In the United States it has recently been shown that the disease is prevalent in most of the Southern States; in some parts most of the rural population is infected. Whole families have been found where the mental and physical development was stunted. An examination of students in a southern university showed over 30 per cent of those from rural districts to be infected. The infection in most of the cases was slight, and but few of them showed any symptoms. Among the poorer classes in the South the disease is producing great havoc, and is accountable very largely for their low mental and physical standards.

California, which has a suitable climate for the development of the hookworm, has been importing the disease for some years, and it probably has gained a foothold here before now. Within the past year several cases have been reported as originating in this State. The California State Board of Health is at the present time investigating a mine which has been reported as infected. The Chinese and Japanese are known to harbor the disease. A certain number of cases are also represented by civilians and discharged soldiers returning from the Philippines and locating in rural districts. California's greatest source of infection, however, has been Porto Ricans coming from the Hawaiian Islands. More than five years ago the writer drew attention to the fact that over 50 per cent of these new arrivals were infected with hookworm. At that time it was estimated that there were over one thousand Porto Ricans in this State.

At present there is quite a colony of these people in San Francisco, many of them typical hookworm cases. Again, a large number of these people are scattered throughout the country districts. The very important work now being done by Dr. Glover of the United States Public Health and Marine Hospital Service, at Angel Island, is preventing this State from being further infected with hookworm by the Hindus. Dr. Glover has found that about 80 per cent of these people harbor the parasite. As a result of his work, they are not admitted to this country.

There are two species of the hookworm found in man, the American and the European. Both are found on this continent, but the American species is the more common. The worm is about half an inch long and as thick as a coarse thread. The mouth is supplied with plates or hooks, with which it attaches itself to the mucous membrane of the small intestine, where it resides. A large number of eggs are produced which are passed off with the intestinal contents. As the eggs, which are microscopic in size, do not develop until after leaving the human body, the parasites can not multiply in the bowel; therefore, the severity of infection depends upon the number of worms gaining entrance into the intestinal tract from the outside.

Under favorable conditions of moisture and warmth, the egg is seen within a few days to contain an embryo, which soon leaves its shell, develops somewhat, and in about a week is ready to infect the human being. The embryo, microscopic in size, may live months or possibly years, in moist soil if the temperature is warm. It gains entrance into the body directly through the skin, or by being ingested with food or drink. The life of the adult worm in man is probably six or seven years.

The symptoms depend largely upon the number of worms present. The worm sucks blood from the intestinal wall, and as it often changes its position, blood may continue to ooze from the site of its former hold. In mild cases there may be only slight digestive disturbances, pain or tenderness in the upper abdomen, or gas formation, and occasional constipation and diarrhœa. In these mild cases there may be very little or no anemia. In the more severely infected cases the patients are likely to be chronic invalids, suffering more or less constantly from indigestion and presenting a greater or less degree of anemia. In the severest infections the complexion is pale or muddy, there is shortness of breath, exhaustion on the least exertion, chronic digestive disturbances, and possibly fluid in the lung and abdominal cavities. There is not much loss of weight, but the tissues are flabby. If infection occurs in the young, development is hindered. The mentality is more or less impaired. Fever occurs in a certain proportion of cases, and may resemble a typhoid or a malarial infection. The appetite is said to be perverted, sometimes clay eating, etc., being indulged in.

Untreated the disease may continue for many years. As previously stated in Porto Rico 30 per cent of all deaths are attributed to this disease. The writer has had two deaths in San Francisco out of about one hundred and twenty cases. The diagnosis is based upon finding the eggs of the parasite in the feces.

The treatment is very simple and most efficacious. Thymol is the remedy that is most generally used. It is given on an empty stomach, and repeated at intervals of a few days until all worms are gone. A combination of oil of eucalyptus, chloroform and castor oil is equally efficient. In cases of moderate severity the symptoms usually disappear at once and soon the patient becomes as strong as ever.

In cities there is practically no danger of this disease spreading, but in rural districts, where there are no sewers and where the ground is moist and is contaminated with fecal material, the danger is great. There is especial danger from those harboring but few parasites and who show no symptoms, as they are not suspected of having the disease, and go about for years distributing infection. If country districts would install proper privies, and see that they were made use of, they would have little to fear from hookworm disease.

AMOEBIASIS.

By G. M. CONVERSE, Acting Assistant Surgeon United States Public Health and Marine-Hospital Service.

Amœbiasis, one of the scourges of tropical lands, is a diseased condition produced by the presence in the large intestine of man of large numbers of a certain kind of amœba—and amœba being a microscopically small living cell having the power of motion, and, like all living things, requiring food and being able to multiply. It may be compared, in a rough way, to a minute particle of jelly; it moves by projecting a small portion of itself in a certain direction and then pulling all the rest of its body into this small portion.

In the large intestine it lives or feeds on the substance that constitutes the wall of the intestine, and in so doing produces inflammation of this wall; as time goes on this inflammation results in ulcers, and small blood vessels lying close to the surface become exposed and bleed. The visible effect of all this is to produce a diarrhea and, often, bloody stools; under the microscope can be seen the particles of tissue of the intestinal wall and some of the amœbæ which pass out with them.

A person so affected with amœbiasis may pass the stools where the next rain may wash some of the contents, together with the amœbæ, into a source of drinking water; or flies may settle on the stools and then pass on to the food of a neighboring family and in so doing leave a trail of amœbæ, which they have carried on their feet, on this food. In passing, it may be well to remark that these are precisely some of the ways by which typhoid fever is transmitted from one person to another; the only difference is that instead of the cause being an amœba, it is a much smaller miscroscopical being, the special bacillus of typhoid.

The ever-increasing intercourse between California and various countries of the Orient where amœbiasis is very common (*e. g.* the Philippine Islands), the presence in California of persons returning from these countries infected with amœbæ, the presence also of numerous Chinese and Japanese occupied in truck gardening, both of these people being filthy in their personal habits, are all conditions which tend to favor the formation of centers of infection of the form of amœba that produces the disease.

Passed Assistant Surgeon J. D. Long of the United States Public Health and Marine-Hospital Service has published the result of observations made in the Marine-Hospital Service in San Francisco showing a total of forty cases observed; of these forty cases the larger number were infected in tropical countries, but fourteen of these cases had never left this country, and it seemed most likely that they had obtained their infection here.

The prevention of the formation of such centers of infection is twofold: First, the protection of the source of drinking water of the various communities by the exclusion from the water shed of persons who may be suspected or who have amœbiasis. Second, the proper disposal of sewage. In this connection it is well to watch the orientals in all sections of the State, and to make certain that they use no sewage for the purpose of fertilizing their vegetable gardens; here it may be well to mention that the city of San Francisco itself must find a quick solution of its own problem of a sewage-laden creek passing through several miles of vegetable gardens.

Persons suspected of having amœbiasis should be promptly reported by the attending physician or by the Health Officer to the State Board of Health.

EPIDEMIC MENINGITIS IN CALIFORNIA.

By Philip King Brown, M.D., San Francisco.

The earliest records of the disease in this State have been obtained from the older physicians still living, and show in 1873 an account by Dr. A. H. Pratt of an epidemic in the Sacramento Valley in Tehama County. It was reported in the newspapers at the time as the Deer Creek epidemic of spotted fever. During the following four years it was epidemic in Sacramento and the San Joaquin valleys. It is quite probable that it has been endemic in the State ever since, also there are no reliable statistics on this subject. In the last four years I have definite knowledge of cases in the following places: San Francisco, Berkeley, Alameda, Pacheco, Clayton, Irvington, Los Altos, Watsonville, Coalinga, Porterville, Bakersfield, Los Angeles, Woodland, Elk Grove, Roseville and Chico. Besides this there have been cases in the San Francisco County hospital brought in unconscious from boarding houses patronized by the floating population. It will be seen, therefore, that the disease is a serious menace all over the State.

The tabulation of the deaths from meningitis in this State for the years 1907, 1908 and 1909 is given in the accompanying diagrams, and shows that during the months of April and May the deaths from meningitis in Central California were in some cases almost double the average for the year. In no other way could this be accounted for than that meningitis was epidemic in these localities at that time. Under the régime of the present State Board of Health an effort is being made to ascertain in each case the type of meningitis, and especially if it could have been the epidemic form. The Secretary of the Board, Dr. W. F. Snow, allowed me to look over at least one hundred letters from doctors in reply to his inquiries. Only a very few of these were satisfactory in presenting information upon which one could base the diagnosis of epidemic meningitis with any certainty; and none of the data collected in this way has been used in enumerating the localities in which the disease has existed.

Deaths from Meningitis: 1907.

Geographic Division.	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
THE STATE	54.7	52	41	58	82	62	55	57	53	45	48	47	56
Northern California—													
Coast counties	2.3	2	1	5	1	2	3	5	3	2	1	----	3
Interior counties	2.7	2	----	2	*8*	*4*	3	3	3	----	3	1	3
Central California—													
San Francisco	12.2	14	10	8	*28*	*17*	12	7	10	15	6	10	10
Other bay counties	8.7	8	7	15	11	9	10	9	8	4	13	5	5
Coast counties	3.7	5	1	5	6	4	3	5	3	2	1	6	3
Interior counties	9.7	7	9	9	*17*	*13*	7	7	9	6	7	11	14
Southern California—													
Los Angeles	12.0	12	11	11	9	11	13	13	13	12	14	11	14
Other counties	3.4	2	2	3	2	2	4	8	4	4	3	3	4

Deaths from Meningitis, by months for which reported: 1908.

Geographic Division.	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
THE STATE	47.5	58	67	65	62	60	34	37	40	35	38	35	40
Northern California—													
Coast counties	2.6	----	*5*	----	*5*	*8*	----	*4*	1	3	3	1	2
Interior counties	2.5	1	4	*5*	4	1	1	1	3	1	3	3	3
Central California—													
San Francisco	9.3	*13*	13	*13*	*18*	9	7	4	7	6	9	8	5
Other bay counties	6.08	4	6	*16*	3	*9*	4	3	6	6	7	5	4
Coast counties	3.2	3	3	3	4	*5*	3	4	3	*6*	1	----	4
Interior counties	10.0	*21*	*15*	11	10	15	10	11	9	7	8	7	7
Southern California—													
Los Angeles	8.08	10	*13*	8	*14*	7	4	6	6	3	6	7	13
Other counties	4.7	6	*8*	*9*	4	*6*	5	4	5	3	1	4	2

*Deaths from Meningitis, by months for which reported, 1909.**

Geographic Division.	Monthly average	January	February	March	April	May	June	July	August	September	October	November	December
THE STATE	33.08	35	37	41	49	33	31	29	27	27	35	25	28
Northern California—													
Coast counties	1.7	2	----	1	1	*3*	*3*	2	1	2	1	3	2
Interior counties	0.9	----	2	----	1	1	----	1	2	1	2	----	1
ntral California—													
San Francisco	5.6	6	4	*10*	*12*	6	3	3	5	6	5	4	4
Other bay counties	5.1	*7*	4	*7*	5	*7*	4	3	4	3	*9*	5	4
Coast counties	3.08	*7*	*6*	*6*	4	3	2	3	2	2	1	----	1
Interior counties	6.1	7	6	6	13	5	3	6	4	5	9	5	5
uthern California—													
Los Angeles	7.6	4	*13*	6	8	6	*13*	8	6	8	5	5	9
Other counties	2.7	2	2	*5*	*5*	2	3	3	3	----	3	3	2

*EDITOR'S NOTE.—It is probable that the effort of the State Board of Health to get ccurate diagnosis recorded on death certificates by personal correspondence with the ttending physician in each death, has been a factor in lowering the totals for 1909.

The infecting organism was described in 1887 by a scientist named Wiechselbaum, and is described in technical language as a diplococcus, decolorized by Gram stain, occurring in tetrads or in short chains, difficult to cultivate and of low vitality. It occurs, like the gonococcus, characteristically within the polymorphonuclear leukocyte. It has been found repeatedly in the secretions of the nose, eyes and bronchi, and has been isolated from the blood. It may occur in the nose of persons in contact with the disease, and has been found even in the secretions of normal individuals not so exposed. It is regarded by Goodwin and Scholly as transmissible through the nasal mucous membranes, and the organism has been found by them in the nasal secretion of 50 per cent of the cases examined during the first two weeks of the disease, and in 10 per cent of the people in contact with these cases.

The general mortality of the disease has been between 75 and 90 per cent prior to the introduction of the Flexner serum, which has reduced the general mortality to somewhere about 30 per cent. More than this, cases treated by Flexner serum have shown very few complications; the chief ones seen have been present when the cases were first examined—an optic neuritis and complete deafness in one patient at the end of three weeks of the disease; a facial paralysis in another, and conjunctivitis in a third being among these. This is, of course, a very different matter from the complications one finds in cases treated by other means than the serum—arthritis (often purulent), blindness, deafness, paralysis, imbecility in various forms being among the commonest of the serious complications seen in cases not treated with the serum, besides inflammations of the mucous and serous membranes, which did not occur in any of the cases treated with serum.

The mortality would doubtless be greatly reduced if the serum could be manufactured in this State, and kept in various parts of the State for distribution so that it can be gotten promptly. It is possible that such a plan can not be effected until the State undertakes to make its own sera, or until it offers subsidy to some properly fitted laboratory to do this work. The serum would otherwise be too expensive since the serious outbreaks of the disease are not very frequent and are geographically scattered.†

TRACHOMA.

By WILLIAM F. BLAKE, M.D., Secretary San Francisco Society of Eye, Ear, Nose, and Throat Surgeons.

The history of the progress of medicine in the last ten years is made remarkable by the study of epidemic and infectious diseases and by the efforts which the medical profession has put forth toward prevention rather than cure. Of the many infectious diseases thus studied, trachoma, a disease of the eyelids and secondarily of the eyes, is a striking example of the good accomplished by isolation and preventive treatment. The factors that have contributed to the increasing menace of this dreadful disease are, first, the crowding together of people into the poorer quarters of our large cities where the disease is constantly present, and hence is spoken of as endemic; and, second, the great and ever increasing wave of immigrant population constantly pouring into this country. Those coming from southern Europe and Russia are from a land where trachoma is the curse of the country, and if one sufferer from the disease escapes recognition and is allowed to land, he becomes at once the starting point of a hundred cases like himself. The disease is a constant menace to California on account of the large oriental immigration, and the greatest vigilance is necessary to prevent its importation.

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†EDITOR'S NOTE.—The California State Board of Health has had under advisement several plans for meeting this important need, and intends to present formal recommendations to the next legislature for funds for this purpose.

The history of trachoma is probably as old as the world. Undoubted references are made to it in the Old Testament and in the writings of ancient Greece and Egypt. From Persia and from Egypt the disease spread along the caravan and coastwise routes of travel to all the cities on the shores of the Mediterranean, from there into central Europe and Russia, on into the states of the Baltic, and even into Ireland. France, England, and Scotland are as yet fairly free of the disease.

This dreadful and repulsive disease is no respecter of sex or age or social station; though truth demands the statement that it is most common among the poor and uncleanly, relatively rare among those living in sanitary surroundings, and practically unknown among the well to do.

This, then, could be written in big type, for it is axiomatic that where soap and water, good plain food, and fresh air are abundant this scourge of our poor quarters does not exist, and as a corollary to this that disease and misery are in direct proportion to insanitary habits and surroundings.

If we now consider the appearance and symptoms of trachoma common sense will suggest measures that we can all take to prevent its spread. At the onset of the trouble the eyes get a little red, not necessarily painful, yet perhaps a little uncomfortable, and possibly the lids are slightly stuck together in the morning. Then gradually comes on a watery secretion, some excess of which may moisten the edges and corners of the lids and even escape on to the cheek. Ordinary light becomes painful, the bright sunlight can hardly be borne, and often the patient secludes himself in a dark corner, or even stays for hours with his face buried in a pillow, to keep out the light. So far this sounds like an ordinary case of mildly inflamed eyes to which the name conjunctivitis is given. And as a matter of fact it is hard even for an expert to differentiate some cases of benign conjunctivitis from the dreadful trachoma in the very beginning of its invasion. Time and observation will surely decide the question for us; the ordinary eye infection has a tendency to quickly get well; quite the contrary, trachoma has no such tendency, its course is one of progression.

Since the early symptoms are so alike in the two very different diseases we must go a step further and examine the eyes and the eyelids. In trachoma, of the slowly progressive type, the inner surface of the lids will seem uneven and raised in jelly-like mosaic elevations, sometimes not changing much the normal color of the lids, sometimes pale and frog spawn in appearance. And the depth of the groove or sulcus or cul-de-sac where the mucous membrane of the lid is reflected on to the eyeball will be filled in and its membrane folded into ridges running parallel with the edge of the lids by the excess of these elevations or follicles in this place. The mucous membrane is lifted up by the accumulation beneath it of little masses of cells, and to these masses, which are characteristic of the disease, is given the name follicle. In the more acute type these follicles are not pale and shiny like spawn, but on account of the presence of more blood in them, are deep red and velvety in appearance. The more severe the case the more angry looking and the more numerous the follicles, which may spread over all the inner surface of both lids.

The front of the eye, which up to this time has been remarkably clear considering the extent of lid invasion, now begins to get gradually red over its white portion, and there frequently forms across the upper part of that beautiful front of the eye called the cornea a deep red leash of newly growing blood vessels which blot out its bright shiny reflex like an eclipse.

The patient having reached this stage we can readily understand that he must be constantly wiping his eyes, and if his fingers and nails are dirty, if the handkerchief or rag he may use is soiled, then he may add a second variety of infection to the one he already has, and the secretion till now watery in character is changed to pus. The probability of an ulcer now developing on the cornea is very great. If an ulcer forms it may do one of two things: first, quickly grow worse by spreading over more of the cornea surface and by burrowing deeper into its substance, eroding the tissues until there is a hole through the outer coating of the eye into its interior; or, second, it may heal after a short or long interval with the resulting disfiguring white scar on the otherwise beautiful surface of the normal eye. The last of these unfortunate results of an ulcer means a greater or less interference with vision; the first means entire loss of the eye.

This so far is the early history of these cases in what is known as the acutely contagious stage. Given one such case in a family, what can be done to prevent its spread to all the others. Of course the first thing to do is to consult the family physician. If for any reason this can not be done the patient can be taken to any of our public health departments or hospitals or public clinics, where free treatment can be had. In the mean time much may be accomplished at home, where the first principles of hygiene and common sense nursing must be grasped and vigorously executed.

The patient must have his own handkerchiefs and towels, and no other child or member of the family should wash in water already used by the sick one. Where running water is in the house this seems an unnecessary observation, but in poor dwellings where there is no running water and where pitchers and wash basins are used this becomes a very necessary precaution. If the child plays with toys or books these must be kept for him alone, as they quickly become infected from the soiled fingers and face of the patient and so form a ready means of transmission of the disease to others. Last, but not least, in the home precautions against the transmission of the disease is the perpetual war which must be waged against the house fly. The sick individual is not only made miserable by these pests and his sleep disturbed, but the contagious secretion on his lids and face is carried by the feet and proboscis of the insect and deposited on the face and eyes of other individuals, as well as on the towels, soiled handkerchiefs, books, toys or whatnot about the room. Thus you will see that the fly, which is always a nuisance, is really a great menace and source of danger, and is probably the greatest and most constant agent in the spread of the disease.

Of the indirect aids special emphasis must be given to good food and fresh air. Trachoma is a disease that makes its most rapid marches and works its most disastrous results in the puny and poorly nourished. To such individuals good food far outweighs in value any tonic that the wisest doctor ever prescribed, and fresh air is nature's tonic, more powerful and efficacious than any highly colored and aromatic mixture of drugs that can be bought. If we increase the strength and general feeling of well being of our bodies, we increase just so far our resistance to disease and our power to overcome infection.

Of the later and chronic form of trachoma I shall say little. No case of trachoma will get well of itself, and if left untreated the natural progression is towards repulsive deformity of the lids, or blindness, or both. The disease does not kill, but the misery and poverty and extinction of hope that follow in its path are perhaps worse than death.

NOTES ON LEPROSY.

By Howard Morrow, M.D., San Francisco.

Until recently scientific advancement in the study of leprosy has been slow. Physicians were inclined to look upon leprosy as inoculable, and the laity considered this disease so contagious that it was dangerous to have a leper live in the same locality. A leprosy commission would decide that the disease is not contagious, and in a few years another commission would decide that it is contagious and favor compulsory notification and isolation. This question has yet to be settled, but granting that the disease is inoculable and contagious, there is no doubt but that personal contact plays a very small part in its spread. With one possible exception, no case of leprosy has been known to have had its origin in California. There are twenty or thirty lepers in the Isolation Hospital of San Francisco, and a few are added each year. Until recently the leper hospital was a real pesthouse in every sense of the word, and offered every possible chance for the spread of the disease to the employees. One unfortunate Chinaman with locomotor ataxia was taken by mistake into the leper colony many years ago, and during this time has occupied a room with lepers many of whom have died, and still this Chinaman remains free of symptoms. Why he is kept in the Isolation Hospital no one seems to know.

A few years back the New York Department of Health decided that leprosy was not contagious, and the dozen or more lepers kept in isolation on North Brother Island were allowed to take up their respective residences in New York City or wander to other places. In London leprosy is not isolated, and it is not an unusual sight to see lepers in the wards side by side with the usual hospital patients. Leprosy is very rare in England, and the few cases have usually acquired the disease in some province.

The invariable presence of bacilli in the tissues, and the fact that the prevalence of leprosy in Norway has been diminished fifty per cent in twenty years by segregation, afford a presumption in favor of the contagious theory (Crocker). A few criminals have been inoculated, but in the majority unsuccessfully. In India it has been estimated that five per cent of those who live intimately with lepers contract the disease. The disease is probably spread by the nasal secretion, discharge from ulcers, dirty linen, infected food and sexual intercourse. Prolonged association in an endemic area naturally favors the spread of the disease.

Recently two dozen lepers have been discharged from Molokai. The authorities considered these cases safe, as the disease had run its course. It is not unusual in the nerve form of leprosy for active lesions to subside, consequently it is not necessary to keep such patients in isolation.

Heredity had been considered to have an influence in the spread of the disease, but most modern authorities do not consider this a factor.

Now that Clegg, Brinkerhoff, and Currie have been able to grow the bacillus on artificial media and keep the growths alive indefinitely, vaccine therapy will soon be used and it is hoped successfully.

SYPHILIS.

By JOHN J. SPENCER, M.D., President California Association for the Study and Prevention of Syphilis and Gonorrhœa.

The disease bearing this title is one of the most serious scourges affecting humanity. It is conservatively estimated that in civilized communities 10 per cent of the populace is afflicted with syphilis in some form. This percentage far exceeds that of tuberculosis, for example, about which latter disease so much is being spoken and written, and about which there is so much activity in collecting funds, publicly and otherwise, with a view of checking its ravages. Inasmuch as the civilized world is beginning to awaken and learn of the seriousness of tuberculosis, and how it may best be prevented and cured, it is evident that any plan of instruction and education of the people regarding the nature and methods of escaping the serious consequences of any disease, persistently and tirelessly followed, will eventually result in greatly lessening the dangers of, if not wholly eradicating, such a disease. This applies with especial force to syphilis.

Cause.—Much has been known regarding the numerous symptoms and modes of carrying syphilis, but it has been only accurately established within a very few years, that the real cause of the disease is a microscopic creature, belonging in a class somewhat higher than bacteria, but not actually of the lowest form of animal life. It is spiral in shape, and allied to similar organisms, which produce other dangerous or fatal diseases in man and certain of the lower animals.

Mode of contagion.—This minute creature only finds entry into the body of man through a break in the surface of the skin or membranes lining the cavities of the body, as the mouth or genital organs. It is necessary that some material containing the *Spirocheta*, as it is called, should be brought in contact with a small crack or scratch or abrasion, or even the follicle from which a hair has been pulled, in order that the disease may begin in that person. Touching an unbroken surface, it is inert and harmless. There is one other mode of transmission which will be referred to later. Once the *Spirocheta* has entered the body, immediately it begins to reproduce itself in prodigious numbers. Entering the lymphatics or lacteals, it gradually finds its way to every part of the body. In a comparatively short time the place of entry begins to show certain characteristic changes and in fairly rapid succession, over a period of from two to six weeks; various other changes follow. These are not identical for all individuals, but sufficiently pronounced to the expert observer to enable him to recognize the disease. Certain outward signs of the disease, after the first sore, are known as *secondary symptoms.* Another later set of symptoms, known as tertiary, occur as a rule in persons who are physically very much below par, or have neglected their treatment. In these enlightened days, the latter class is seldom seen. There is another mode of transmission of syphilis and that is from parent to child. Syphilis is peculiarly fatal to child life, a large percentage of children is stillborn as a result of the disease. Another large percentage is born to live but a very short time. Still another large percentage ekes out an utterly wretched existence, suffering acutely in various ways, reaching adult life physical derelicts and degenerates. Some of these marry and their offspring show evidences of the disease, or are likewise physical degenerates. Thus is the biblical warning as to the transmission of disease to "the children of the third and fourth generation" verified.

Syphilis of the Innocent.—It must not be assumed that syphilis is conveyed only through sexual contact—in other words, that it is necessarily a shameful disease. There is a phase of it, which, because of the manner of its acquirement, is called "Syphilis of the Innocent." This name is used simply to indicate that the person affected has acquired the disease in some manner other than by sexual contact. The so-called extra-genital sources of infection are numerous and varied. A syphilitic sore in the mouth or back of the throat may pass the disease to another through a kiss; by the common use of eating or drinking utensils; by a tobacco pipe. A razor may carry the disease. A physician may be infected through a hangnail or a crack on his finger, a sore forming at that site. A wet nurse sucking a syphilitic infant may have her nipple infected. In short, any intermediate object carrying syphilitic discharges from a sore is capable of passing the disease to another.

These are a few of the ways possible by which syphilis may be acquired innocently. Whether acquired thus, or in the more usual manner, the course of the disease is relatively the same. Any part of the body may be affected. At the outset, the skin and mucous surfaces, such as the lining of the mouth, throat and genitals, are more likely to be affected than other parts. Later, the membranes covering the bones, as well as the bones themselves; the various important organs, especially the nervous system, beginning with the brain. Regarding its effects upon the latter organ, the majority of the cases of chronic paretic dementia,—in other words, the chronically insane,—inmates of our asylums have become so through a syphilitic infection. Last, but not least, after all outward signs of the disease have disappeared, and the individual may be safely regarded no longer able to transmit it, a peculiar degenerative change affecting the coats of the arteries, develops very slowly and insidiously. This consists of a hardening, thickening and brittleness of the coats of the arteries, not only interfering with the proper flow of blood to that part of the body supplied by this artery, but sooner or later the artery is liable to break at some point where it is weakest and most brittle. This accident occurs most commonly in an artery of the brain and is followed by the immediate or early death of the person, or leaves him paralyzed and helpless. If this affection of the coats of the arteries occurred late in life, it would be unfortunate enough as terminating some useful career, a little prematurely perhaps. It occurs, however, most often in individuals in the prime of middle life. Many useful or successful lives have ended thus, when most needed for the rearing of a growing family or for the conduct of some important business enterprise.

Attitude of life insurance companies.—Because of our knowledge of such possibilities as the few above enumerated, the life insurance companies, as a rule, refuse to insure a former syphilitic, or, in order to assume the least costly risk, cause such a person to pay very heavy premiums for his insurance.

Prevention.—Here, as under any circumstances, prevention is better than cure. How shall prevention best be accomplished? Primarily by the physical purification of prostitutes.

Cause of prostitution.—Promiscuous sexual congress has and will always exist to a greater or lesser extent. This, in the more civilized communities, begets prostitution. Prostitution is the effect and not the cause of unbridled indulgence of the sexual appetite. Prostitution is, however, the most fruitful source of venereal disease. It is quite generally conceded among those devoting especial attention to the study of the social evil, that the most important factors by which to combat it are first, *publicity,* and secondly, *education.* All other methods combined can not be as important as these.

Fallacy of regulation.—All attempts at so-called regulation of prostitution are most ineffectual, and have been practically abandoned in all but about three countries. It is found to be, not only impractical, but actually puts a premium on clandestine prostitution, thus favoring the spread of venereal disease. It has also the serious objection that *only* female prostitutes are regulated,—*i. e.,* segregated into a certain quarter of the town and forced by law to submit to a periodical inspection, in order to determine their freedom from venereal disease, or otherwise. The male prostitute is *never* required to submit to inspection. It may well be left to the imagination what possibilities for the active spread of venereal disease are hereby involved.

Inadequacy of inspection.—Inspection of prostitutes conducted by the most skillful and painstaking examiner is often incapable of demonstrating with certainty that the woman is free from contagion. If such a woman be given a clean bill of sexual health she is capable of transmitting the disease to many men, since her livelihood depends upon the activity with which she plies her calling. Berlin, Germany, and Budapest, Hungary, each have a large and flourishing society for combating venereal diseases. They offer an abundance of information on these subjects, through lectures and literature. Better than this, they make it possible for those requiring it, to receive treatment, either for a small sum or gratuitously. Better even than this plan, which, of course, is from private initiative, is that pursued in Denmark and Norway, by the government. All cases of venereal disease, no matter what the station in life the individual who has it, are compulsorily reportable. Those occurring in private practice are permitted to have their identity unrevealed, unless their physician report to the police that the individual is not giving his disease the proper care and attention. In such case, the identity is required to be made known to the police, which obliges the person to give himself or herself proper care until cured. In order that the question of expense may not stand as an excuse, these governments offer free treatment to all.

Opportunity for treatment.—In order, then, to combat a disease like syphilis most successfully, those infected must be afforded ample opportunity for intelligent treatment. This would mean the establishment of free clinics in those parts of the city where people are most likely to be affected, as along the water front; where brothels are plentiful; where cheap saloons and dance houses abound. In such places let it be known, by suitable placards or notices, that a clinic for the treatment of venereal diseases may be found close at hand, where, if need be, free treatment will be dispensed.

Ideal management.—Naturally the ideal management of the situation would be an absolute quarantine of the infected person until cured. Since, at present, this is impossible, then treatment must be ready at hand, and even free. Thus the general public will have relief offered in an inexpensive manner, which will lead them to avail themselves of it more and more.

Compulsory notification.—Another valuable aid, but coercive in its nature, would be the placing of venereal diseases in the list of contagious and infectious diseases by the State Board of Health, with compulsory notification of the authorities by those conducting brothels. As this plan is carried out in Detroit, Mich., a physician who learns that his patient has acquired his infection in a given brothel, notifies the police. The latter, pursuant to the ordinance, placard the house, as in the case of any contagious disease, stationing an officer, if required, to warn would-be patrons. The actual result of this, as applied in Detroit, has been to make the keepers of such houses keenly on the alert to detect and remove an infectious inmate. As announced elsewhere in this Bulletin, the California State Board of Health has notified physicians and health officers that beginning January, 1911, *syphilis* and *gonococcus infections* shall be reportable. It is to be hoped that physicians of the State will support this important action.

Absence of hospital facilities.—In no city or state of the United States, excepting in the Charity Hospital, New York City, is any provision made for the care and maintenance of persons suffering from an acute venereal disease as such. Private hospitals of the better type refuse to take such a patient at any price. Many such persons are ill enough to require rest in bed in an hospital. The total absence of such facilities is responsible for many of the complicated and protracted cases which occur. Benevolent lodges and fraternal orders should change their by-laws, so that the members suffering from venereal disease should be entitled to receive treatment, or in any event sick benefits. The manner of acquirement should not play any part in preventing the affected person from receiving the fullest and promptest treatment.

Now, a few words as to methods by which more publicity and better education regarding venereal diseases are to be attained. At present, such information as the public gets comes usually from a medical man whom he consults, *after he has* acquired the disease. Hence the public should be instructed by means of public talks to mixed audiences, by judicious and qualified persons, *first,* to cast aside the centuries-old prudishness and false sense of shame regarding the manner in which a venereal disease is contracted. It should be led to look upon the disease in the same light as any other contagious disease, by affording every facility for the prompt relief of the affected individual. The nature of these diseases, as well as their dangerous consequences, should be simply, but clearly and forcibly, set before the public. From an economic standpoint, employers should afford infected employees every opportunity for receiving prompt and efficient treatment, in order that the productive labor-capacity of the individual may be kept up to the highest standard of efficiency. One important factor in the spread of contagion,—the unspeakably filthy and dangerous community drinking-cup,—should be banished at once and for all time.

Teaching the children.—Teaching should not be confined to adults. The little children of the tenderest years may be led along unobtrusively to study the phenomena of reproduction in plant-life and later in the higher organisms, until, in the higher grammar and preparatory schools, they may be frankly taught the phenomena of animal-reproduction as it occurs under normal conditions and laws; what infraction of these laws may result in.

The mothers of the little children in the public schools should also be educated, so that an intelligent influence may be constantly at work to remove secrecy and pernicious prudery from sex topics in the mind of the growing child. Let it mature with the idea that these topics may, and should be, discussed under proper conditions, and be taught to believe and practice continence and sobriety as being conducive to the best physical condition of the body. A clear and correct knowledge of the possibilities following in the train of improper or impure sexual indulgence will have a prodigious influence in lowering the percentage of cases of venereal disease.

SOME SKIN DISEASES THAT ARE COMMON, THOUGH PREVENTABLE.

By Harry E. Alderson, M.D., San Francisco.

The prevention of disease is the constant aim of the physician, and in this he is now being more and more aided by the great public whose keen and steadily growing interest in health questions constitutes one of the hopeful signs of the times. Health boards, medical societies, civic societies, labor unions, various other organizations working for the public good, and also the Press are coöperating in the working out of this great question of the conservation of the public health. These bulletins, which are issued regularly by the California State Board of Health, are intended for the instruction of the laity, and so the writer of this article, as far as possible, will avoid the use of technical expressions.

There are several annoying skin diseases which are only too common; this would not be so were the general public better informed in these matters, and more careful in observing the ordinary rules of hygiene. One of the best means we have for the prevention of contagious or infectious diseases is by keeping up the natural powers of resistance, for it is a well known fact that where one is in good health, strong and vigorous, Nature is able to throw off most infections which are daily met with in public places. Simple personal cleanliness is another factor in reducing the number of human ills. However, neither good robust health nor ordinary cleanliness suffice to completely protect one from some troublesome and often loathsome skin affections (as well as serious constitutional diseases), the germs of which appear as unseen foes in places frequented by the public.

A most prolific source of danger of this sort is the barber shop, which, no matter how clean it may appear to the unaided eye, if certain hygienic rules are not scrupulously carried out, constitutes a veritable distributing center for various kinds of infections.

Many a man who comes from a shop "well barbered" and feeling clean, has implanted upon his face or scalp (or breathed into his upper air passages by the friendly barber) the germs of some infection which before long develop lesions or symptoms sending him to a physician. A large percentage of the patients who come to the skin specialist have troubles directly traceable to some barber shop, manicure, massage, or hair dressing establishment, public bath or toilet.

The danger from these sources is really so great that all barber shops, hair dressing, manicure and massage establishments, and public baths and toilets, should be under the constant, watchful eye of the health department to insure the proper observance of hygienic rules. Not only should all these establishments be constantly kept in a thoroughly clean and sanitary condition, but the employees should be free from any contagious or infectious disease (including tuberculosis). It ought to be the duty of a health department to see that this is the case, for the layman is rarely in a position to judge for himself. Every place frequented by large numbers of individuals should be thoroughly disinfected at regular and short intervals by formaldehyde gas or sulphur fumes, for in this way many of the unseen dangers that commonly lurk in such places can be eliminated. No person with active syphilis, "barber's itch," ringworm, or any other contagious or infectious disease, should be served knowingly.

No doubt this often occurs, however, at times knowingly, and at times unknowingly, owing to the difficulty in recognizing some of these conditions in their milder phases. The danger from this source can be very greatly minimized, however, by thoroughly sterilizing all tools, instruments, brushes or combs after use by means of formaldehyde gas or by boiling, by thoroughly boiling all towels or cloths before laundering, and by thoroughly cleansing the hands and wrists by using a disinfecting solution before handling a new customer. All mugs, shaving brushes, scissors, clipping machines, razors, needles, pincers, contact parts of vibrator machines, and all other implements used should be sterilized, either by immersion in boiling water or in alcohol (at least 60 per cent strength) or by formaldehyde gas or solution after each separate use. Combs and brushes should be thoroughly cleansed with soap and water at least once daily. The razor should be disinfected each time before stropping by dipping it into a 15 per cent solution of formaldehyde. The hands should always be thoroughly cleansed before serving each person. How seldom is this elementary rule of hygiene carried out! And what a dirty practice for a barber to remove the germ-containing dirt from his hands each time by rubbing it off on each successive customer's face! That this is frequently done may be observed by any one spending a half hour in the average shop. An occasional barber will be seen once in a while to wipe or rinse his hands, perhaps, but this is not washing. It goes without saying that clean towels should be used for each person, and usually this is observed in the best shops, but a watchful bystander will often see things which in this regard surprise and disgust him.

About the dirtiest, and one of the most dangerous practices, is the use of the alum or some other syptic in stick form to stop bleeding. This stick is used on one person after another and each time a deposit of blood or serum is left on its end. Even the slight wiping off of the stick, which may be occasionally indulged in, is insufficient to protect the next person treated from a possible infection. The applying of such a stick to a small wound or sore on the skin of a person with syphilis, and later to a small wound or sore on a healthy person, is a procedure the danger of which is so apparent that it is hardly necessary to state the fact. Syphilis and other diseases are without doubt readily conveyed in this way, as every physician knows from observation. That more such cases do not occur is largely a matter of luck. Going to the average barber shop is like taking chances in a lottery, only in this case the prize (?) is apt to be some loathsome disease; this result depends principally upon whether one has been preceded by some infected person. If it should be necessary to stop bleeding, fresh powdered alum can be applied on a fresh clean towel or very hot water on a fresh clean towel, with pressure. Sponges, or powder puffs, or any other articles not easily sterilized, should not be used in a barber shop or any other establishment where numbers of people are treated. Such places should always be well ventilated and provided with running hot and cold water. Of all those who in their work come in intimate daily contact with large numbers of the public, the barber, masseur, waiter, hair dresser and manicurist have the best opportunities to help spread disease, and in most cases they unconsciously ''do not neglect the opportunity,'' as indicated in the preceding pages. From using contaminated instruments, towels or hands, to breathing their foul breaths often directly into their helpless victims' faces, they violate every rule of hygiene and only too often with serious and far-reaching consequences.

The more common skin diseases that come within the scope of the title of this paper will be briefly mentioned:

Sycosis is an inflammation of the hair follicles of the hairy portions of the face, and exists in several forms—only those due to microbic infection concerning us here. This form of the disease is far too common, often easily prevented in the first place, but very difficult to eradicate when it has once become ''well rooted.'' The infecting organism gets down deeply into the follicle which contains the root of the hair. It results in the formation of pustules more or less numerous, each one of which can be seen surrounding a hair. Soon the inflammation spreads through the adjacent skin, oftentimes involving the entire bearded portion of the face, or it may occupy only small areas, causing more or less thick scabs to appear over all. Each involved hair follicle is the seat of a tiny abscess, and often larger abscesses form; sometimes the inflammation is quite severe and may result in permanent loss of hair of the region involved. This condition is also called ''barber's itch'' and it is well named. It may be caused either by the ringworm fungus (ringworm of the beard) or the ordinary pus producing organisms. The disease is difficult to eradicate because the process is deep seated, extending down beneath the roots of the hair where medicinal agents penetrate with difficulty.

Impetigo contagiosa is an acute inflammatory and very contagious disease which usually first occurs upon exposed parts (the face or hands), and then spreads to other parts of the body, wherever it may be carried by direct contact. Fortunately, the process is superficial, and usually it is easily cured. The lesions consist of flat pustules and vesicles which are surrounded by a zone of inflammation. They soon dry, leaving yellowish granular crusts, which are very superficially situated and look as though they were lightly ''stuck on'' the surface. Although usually a simple affair and readily cured when properly treated, the disease can cause great distress on account of its unsightly appearance.

Paronychia (or ''run-around'') is a pustular infection situated at the bases of the nails. On the fingers it is often due to neglected or improperly treated ''hangnails.'' Quite frequently it is caused by the manicurist, who uses the orange stick too vigorously over the cuticle. This same orange stick is used on one person after another and can carry infections of all kinds, particularly if it bruises or abrades the skin.

Erysipelas and various other serious diseases due to bacteria all can be, and doubtless are, often transmitted in public places.

Pediculi (lice) are fairly often seen on individuals, who are shocked and astonished to find them. No doubt they are frequently picked up in public places (barber shops, toilets, massage and hair dressing parlors). The headrest on the barber's chair, which comes in contact with the back of the neck as well as the head, can form an ideal hiding place for all kinds of infections. The towel covering the same is usually changed after each customer, or a clean sterile piece of paper is placed there, thus reducing to a minimum the chances of contagion. However, the parts below the headrest and also the back of the chair can do their part in infecting the individual.

Ringworm is usually a disease of childhood, but occasionally it is found on the hairy portions of the adult face (one variety of ''barber's itch''). No doubt children have had the ringworm fungus planted on their scalps by the barber's scissors, clippers, comb or other implement. Probably there are few barbers who would serve a customer presenting a well developed ringworm. Small scaly patches on the scalp, which may be the beginning of a ringworm and which lodge the fungus, are easily overlooked.

Baldness (partial or complete). While it would be hardly fair to blame the barber or hairdresser for every case of baldness, it is a fact that in many instances the trouble had its beginning in improper treatment of the scalp, or in direct infection of some sort resulting from lack of observance of sanitary rules. Of course a fair percentage of cases of premature baldness are due to heredity, but the majority result from some disease of the scalp (of which ''dandruff'' is a common symptom). A great deal can be done with the latter class in the way of prophylactic and curative treatment, and, on the other hand, an immense amount of harm can be done by improper treatment (as often observed by skin specialists who frequently have patients whose scalps have been maltreated by barber or hairdresser). Probably over seventy per cent of all cases of loss of hair are due to the conditions associated with what is popularly known as ''dandruff.'' This is often aggravated by the officious barber or hairdresser, whose utter lack of knowledge of the anatomy and physiology of the scalp does not deter him from giving advice or from trying all kinds of empirical formulæ, or the much used dirty pads or brushes attached to a vibrator apparatus. The main object in the minds of such individuals is to annex the almighty dollar, and to them the permanent cure of a customer is a mild sort of calamity. Their mixtures are made to sell only, and naturally those that give only temporary relief are the best, from the seller's point of view. It is difficult to understand why a large part of the community will consult these people and have their scalps maltreated instead of going to some reputable physician for safe advice. The worst offenders of all, however, are the advertising, so-called ''specialists'' whose ''parlors'' are run solely for profit, and big profit at that. Besides making their innocent victims believe that they have certain diseases (which they have not), they expose them to all kinds of contagion through their neglect of the ordinary laws of sanitation. A common cause of scalp trouble is the custom of wearing the ''rat'' or other artificial device which may interfere with the proper nutrition of the hair.

While ''dandruff'' does not always cause baldness, it is true that many cases of the condition known as *alopecia pityrodes* are preceded for months or years by this scaly condition of the scalp, which is so readily relieved by proper treatment. Some authorities recently have demonstrated the contagiousness of *alopecia pityrodes,* and various microbes have been found in the diseased scalp. But the main fact which concerns us here is that proper hygiene of the scalp will prevent fully seventy per cent of these cases of premature baldness. There are some forms of permanent baldness due to destructive processes in the scalp induced by various kinds of organisms, which quite obviously, in view of what has been said, are preventable.

The *alopecia* due to syphilis may occur early or late in the disease. That which occurs early is a thinning of the hair in irregular scattered patches giving it a sort of ''moth eaten'' appearance, ''similar to what would be produced by cutting the hair carelessly with a dull pair of shears'' (Jackson). This may involve also the eyebrow in the same patchy way, causing a break in the arch. This early form is only temporary. Permanent baldness results from local destructive lesions in the scalp, and is one of the rare later manifestations of syphilis, usually in those inadequately treated.

There are other forms of baldness which need be only mentioned here. *Defluvium capillorum,* or a general thinning and falling of the hair, may occur during or after some severe illness.

Alopecia areata, or circumscribed baldness, occurs suddenly in circular or oval patches sharply defined against the surrounding hair. These patches vary in size and in number, and exist over long periods, but the prognosis is usually favorable in those who have not passed middle life. It is generally considered as being due either to some nervous condition or to the effects of microbic invasion, or to both. Ignorant meddling with the various scalp conditions is the cause of many complicated cases which finally have to come to the skin specialist for relief.

Scabies (“the itch”) is a very common contagious skin disease, due to a tiny animal parasite which burrows into the skin, produces characteristic lesions and causes severe itching. This parasite can be easily found and seen with a low power microscope. The lesions usually are seen where the skin is thin, particularly upon the anterior surface of the wrists, between the fingers, in front of the armpits, on the breasts, about the navel, and on the external genitals, but in cases of long standing they are more widespread. Usually the lesions are not found higher than the collar bone nor lower than the knees. In severe old cases, however, the entire skin surface may be involved. Untreated cases never get well of themselves and are apt to develop complications. As long as a patient has on his skin any lesions of this disease, he is a menace to those with whom he comes in close contact. This disease has various popular names, “Manila itch,” “Porto Rican itch,” “prairie itch,” “swamp itch,” “lumberman’s itch,” “Ohio scratches,” “Texas mange,” “elephant itch,” “Cuban itch,” “Philippine itch,” and “seven-year itch,” but in all the parasite is the same. Some of the above terms are also applied by the laity at times to various other itching skin conditions, but most often it means “plain scabies.” Proper thorough treatment will promptly cure the disease.

Syphilis, while it is mentioned last, is really first in importance on account of its serious complications. Elsewhere in this Bulletin an account of this disease will appear.

SOME RECENT ADVANCES IN SURGERY.

By Raymond Russ, M.D.

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In the past few years surgical advance has been so great that it has won the admiration even of those who regard this subject with abhorrence. There is something fascinating in the achievements of mechanical skill in any line of work, and the art which seeks by dexterous manipulation to circumvent disease is certainly not lacking in human interest. As one old writer tersely, and somewhat ironically puts it, “Surgery is but a bloody fight with Death,” but such a definition smacks of the old order of things when surgery was adopted as a last resort and nerve was supposed to be the chief requisite of the physician who practiced it. Fortunately for the public, the occasional operator is rapidly giving way to the man who is well trained in operative procedure, and familiarity with present day methods no longer makes this picturesque definition acceptable. Many still believe that surgery is wholly a matter of mechanics, and that a man who is nimble with his fingers must of necessity be a good surgeon. Nothing is more erroneous or is more conducive to poor results. The surgeon who regards the body as a machine, and feels that it can be treated as such, that it can be handled and repaired simply as a complicated and intricate mechanism, must fail signally in his calling. Surgical judgment, that quality so difficult to define, born as it is of years of experience and indefatigable labor, nourished through constant contact with a large number of operative conditions, will be most woefully lacking from this viewpoint. Present day surgery has a basis which is distinctly physiological. The functions of the organs must be thoroughly understood and fully appreciated, and operations must be so conducted as to reduce to the minimum the patient's risk. Such conduct means much more than manual dexterity; it necessitates a care and discrimination only gained by intimate knowledge of body function Thus is surgery lifted from a mechanical vocation to the dignity of an art.

Space will only permit me to touch briefly upon a few lines of investigation in present day surgery, and so the avenues of thought which would appeal to the average layman and those where a conception could be obtained with the avoidance of technicalities, have been chosen.

SURGERY OF THE CHEST CAVITY.

Until very recently the deeper portions of the chest cavity, containing the heart and lungs, have been outside the range of surgical procedure. The sage advice has been handed down since the time of Hippocrates for surgeons to stop in their manipulative procedures at the pleura (tissue covering the lungs and chest wall). Thanks to animal experimentation, methods of artificial respiration have been devised so that at the present time it is possible to open and fully expose the heart and lungs without seriously embarrassing the entrance and exit of air. This portion of surgery, while it is meeting with limited human application, is as yet to a great extent in the experimental stage, but the results which thus far have been obtained force one to regard the subject with enthusiasm. Experimental evidence is rapidly opening up to surgical intervention at least one third of the human body which has hitherto been beyond its range.

We have found, for instance, in animal experimentation that the tumultuously beating heart can be freely incised and sutured again, and that various apparatus to record blood pressure, respiration, etc., show little or no change from these operative manipulations. Such results are startling, and a few years ago would have been considered beyond belief. Many successful operations deep in the lung tissue have been performed, and the number of cases of suture of the heart in human beings, following knife and bullet wounds, has reached one hundred and fifty. Of this number thirty-five per cent of the patients have recovered, while prior to operative interference the recoveries were only fifteen per cent. No less a surgeon than the great Billroth said less than twenty-five years ago, ''Let no man who hopes to retain the respect of his medical brethren dare to operate on the human heart,'' and yet the mortality from these operations is to-day no greater than that which Billroth himself experienced in his early work in abdominal surgery.

Certain forms of valvular disease of the heart, so common among all classes of people, will no doubt be successfully treated at some future day by surgery. This work is not beyond the advanced surgeon's hopes, and will be made available for the relief of many sufferers through animal experimentation. It would seem, upon first thought, that the surgeon of to-day was much bolder than his predecessors, but such is not the case in the ordinary acceptance of the term, for the application of accurate knowledge which has been learned through experimentation to the cure of human ills is hardly to be classed as boldness. Extreme caution marks present day methods, and temerity with inexperience as a basis is frowned upon.

RESUSCITATION.

In 1902 Kuliabko showed that the animal heart could be made to pulsate for many hours after death by passing certain fluids through it. This observer was able to isolate the mammalian heart from the body, keep it in a refrigerator for forty-four hours, and then make it beat rhythmically once more by passing through it a solution of defibrinated blood previously treated with oxygen. This fact was soon taken advantage of by several observers who were seeking to apply such physiological truths to the subject of surgery. At present the hearts of animals have been made to beat once more after five to fifteen minutes complete stoppage from asphyxia, drowning, chloroform, ether, and electrical currents. These results, startling as they are, have passed from the experimental laboratory to the operating room, and already a number of patients who have lapsed into a state of apparent death have been brought, almost miraculously it would seem, back to life.

One of these methods, which in a number of instances has given excellent results, is known as ''cardiac massage,'' and it has been applied in those conditions, which are fortunately not common, of complete collapse of the patient under chloroform, and even in a few cases under ether anæsthesia. The value of this method was early established by Schiff, who was able to resuscitate animals by rhythmical compression of the heart by the hand. Up to the present time this method of cardiac massage has been employed in fifty human cases, and it has proven of distinct value in eighteen. The methods of procedure in such instances are too technical for general discussion, and are far beyond the confines of this brief article.

Another means of resuscitation, which has been found most useful, is the injection of certain fluids directly into the large arteries, and some observers have been able to restore life in this way after as long an interval as twenty-five minutes of apparent death has elapsed. Meltzer demonstrated a year ago that respiration could be carried on by continuously inflating the lungs with air by means of a rubber tube passed down the trachea (windpipe) to its division without any lung movements whatever, either normal or artificially produced. In this way life can be kept up for hours, and the method suggests itself at once as being valuable in the great problem of resuscitation.

ARTERIES AND VEINS.

Up to a few years ago, when wounds of the large vessels occurred, there was no recourse to the surgeon but to cut down upon them and tie them above and below. If the artery were a large one and the principal supply of a limb, especially of a leg, the danger of gangrene from thus shutting off the blood supply was very great. At the present day such operations are no longer necessary, for it has been found that arteries and veins can be sutured without destroying their function as well as other structures of the body, and by experimental practice any surgeon can now familiarize himself with this technique.

The successful suturing of blood vessels brings an enormous advance to the subject of surgery. In 1894 Abbé severed the abdominal aorta (the great blood vessel of the abdominal cavity) of a cat, inserted into its ends a thin, sterile glass tube and tied the aorta securely over the phlanged extremities of this tube. Several months later the cat was shown at one of the New York medical societies in perfect health. This marks the first work upon the large arteries of the body, but the subject has now grown to massive proportions, although at present the placing of foreign materials as glass tubes, etc., within the body is not followed. By accurately suturing all structures it is now possible to transplant the kidney from one animal to another and still maintain its function, and this principle has been carried to other organs of the body.

Carrel, in 1906, was able to keep arteries viable by means of cold storage at a temperature of thirty-two to thirty-three degrees Fahrenheit. After twenty days he succeeded in transplanting such an artery into the aorta of a cat, and after two years the cat was perfectly well. These principles have been extended so that in a number of instances it has been possible to transplant entire limbs, and Lexer has gone so far as to successfully transplant a knee joint, taken from a person on whom an amputation had been necessary, to a man who had lost the function of his own knee joint. This operation has proven successful in three cases, and the patient has had good function of the foreign joint.

TRANSFUSION.

Every one knows the extreme degree of weakness which results from great loss of blood, and it is but natural that directly taking the blood from one individual and introducing it into the veins of another should have been tried at an early period. Transfusion, therefore, is an old practice and we find it mentioned in the works of Pliny and of Celsus; and it is also probable that the ancient Egyptians knew about it and practiced it to a certain extent. The first authentic case which can be found is that of Pope Innocent the Eighth who underwent an operation in 1492. In Villari's Life of Savonarola the following quotation appears: "The vital powers of Innocent the Eighth rapidly gave way; he had for some time fallen into a kind of somnolency, which was sometimes so profound that the whole court believed him to be dead. All means to awaken the exhausted vitality had been resorted to in vain, when a Jew doctor proposed to do so by the transfusion, by a new instrument, of the blood of a young person—an experiment which had hitherto only been made in animals. Accordingly, the blood of the decrepit old pontiff was passed into the veins of a youth, whose blood was transferred into the veins of the old man. The experiment was tried three times, and at the cost of the lives of three boys, probably from air getting into their veins, but without any effect to save that of the pope."

This unfortunate incident describes one of the dangers of transfusion, that of air embolism, a danger which modern methods have circumvented. After the discovery in the seventeenth century of the circulation of the blood by Harvey, a decided stimulus was given to the work of transfusion; tubes, quills, and various foreign materials were now used to connect up the blood vessels, but clotting of the blood many times resulted, and the method soon fell into disfavor. If a blood clot pass into a vein it can easily be pushed on in the blood stream until it reaches the lungs. Here it will act very much like a cork, effectually blocking the blood supply to a certain portion of the lung tissue. Pneumonia will result from such a blocking, and this generally proves fatal. Methods of transfusion must, therefore, obviate this great difficulty, and this has now been done by bringing accurately together the inner coatings of artery and vein without the interposition of a foreign substance. Transfusion is now being practiced in certain cases. Results in many instances are almost startling. Persons exsanguinated have been within a few hours thoroughly revived. The method has been used with excellent results in a condition known as hemorrhage of the new born. It is also applicable in the debility resulting from malignant disease, in poisoning by illuminating gas and several other conditions. This operation may be done painlessly, and the blood which the donor has lost is regained within four or five days' time.

Many other advances in modern surgery could be named if space permitted. It will be apparent to him who reads these pages that this remarkable progress rests upon a single fact—animal experimentation. Such experimentation has one great object, the application of the general principles deduced to human surgery. As the present day progress in surgical investigation is so rapid that a particular problem is old, or has been displaced by some more elementary and broader conception, almost before an observer can finish it.

To very few of the workers who are devoting their lives to developing this great subject comes the honor of discovering some basic fact. The labors of the many are but steps in its development, and each step is shared with an expectant, eager, but critical profession. Individuality sinks into the great current of thought which is flowing steadily onward, but the rapid advances which this combined toil yields keep one's enthusiasm at the highest pitch,—and what is more conducive to a good, wholesome enthusiasm than the saving of human life.

COMMENTS.

Dr. William Colby Rucker and the "Claws of the Beast."

When Dr. W. C. Rucker was granted a leave of absence from the United States Public Health Service and accepted the important appointment as Health Commissioner of Milwaukee, he incurred the jealousy and enmity of the ''Beast''; when Dr. Rucker eliminated useless political timber and began to build up a strong, efficient health department for Milwaukee, he aroused the anger and the fear of the Beast, and his destruction was determined upon. No clearer description of what happened can be given than that of Judge Lindsey in his personal account of how the Beast reached for him first with his hind claws of wine and women. Only in Dr. Rucker's case the Beast took no chances; a notorious woman, a sympathetic district attorney, a ready newspaper were counted on to deceive the public into giving credence to a trumped up story, and the characteristic American indifference to subsequent exposures of blackmail were counted upon to protect the Beast from serious consequences.

Dr. Rucker needs no assurance from Californians that they fully understood he was temporarily the victim of the unclean forces which are desperately battling to regain control of Milwaukee, but the following resolutions are printed for the benefit of those to whom Dr. Rucker may not be known and who do not understand the conditions which took this pioneer in health conservation to Milwaukee.

On the evening of October 12th a number of the personal friends of Dr. Rucker met in San Francisco to express their sympathy and their confidence in him, and to unite in protesting against the slanders which, through political machinations, have been heaped upon him in the city of Milwaukee. The following resolutions were adopted:

Resolutions Commending Dr. Rucker.

Whereas, Certain charges have been lodged against Passed Assistant Surgeon William Colby Rucker, United States Public Health and Marine-Hospital Service; and

Whereas, It has been found that these charges are absolutely without foundation, and have been made with malicious intent and with the purpose of injuring the character and professional standing of Dr. Rucker; and

Whereas, Dr. Rucker has been fully exonerated of these charges by the court, the common council, the mayor of Milwaukee, and the Surgeon-General of the United States Public Health and Marine-Hospital Service, and the purpose and purport of them clearly shown; therefore, be it

Resolved, That we, his friends and fellow workers in the San Francisco Sanitary Campaign, in which he took such an active part, do hereby express our full confidence and sympathy and our deep regret that such a slanderous calumny should have been voiced against a physician whose splendid achievements and sterling character have won for him a national reputation.

Resolved, That a copy of these resolutions be sent to Dr. Rucker and the various bodies in this city who have been actively interested in his work.

The Leper and the Lesson.

Edward Fickert, a former soldier of the United States army serving in the Philippines, has been declared a leper. The evil magic of this word has instantly converted him into an outcast from society, shunned by all who can read the public print. Neither the disease nor the man deserve this treatment. Mr. Fickert is in the early stages of a disease which is communicable to others in ways not yet fully understood. This fact, together with the present inability of science to cure or even to arrest the progress of the disease, makes it desirable for society to restrict the relations of this man with others to whom he might transfer the disease; but this may be done without undue hardship or odium attaching to him, and the public has no occasion to become alarmed.

The recent spectacle of three counties appealing to the State Board of Health to advise them how to get rid of a leper should teach its lesson. Mr. Fickert's unfortunate experience will have served a purpose if it leads to the establishment of a State leprosarium, or to forcing Congress to establish a national home for such unfortunate cases. In the mean time the State Board is investigating the travels of Mr. Fickert from one county to another in the hope that some lessons in intercounty courtesy may be taught. "The Notes on Leprosy" published in this issue of the Bulletin are pertinent at this time.

The Hookworm and the Hindoo.

Californians will welcome the statement that 80 per cent of the Hindus coming to the State have hookworm disease, and perhaps regard this as a providential arrangement, much as our Puritan forefathers regarded the appearance of the smallpox pestilence among the Indians as a divine interference in their behalf. But there are many sides to this, as to most questions.

In the first place, this disease is not an incurable one. A few days of treatment and a few cents worth of medicine are all that a cure requires. When the ship companies learn this there will be ample time on each voyage for the ship surgeon to make "good" Hindus out of every passenger on board. We must devise other methods of exclusion.

In the second place, if 80 per cent of the Hindus already admitted to California have hookworm, there has been a much greater dissemination of the disease than has been previously thought to be the case. The State Board of Health is now collecting information on this point.

From a third point of view, if we are to deport and turn back Hindus from this port of entry because of infestation with hookworm, we should take similar precautions with the Porto Ricans and the similarly infested individuals of other nationalities seeking entrance here. Probably every unselfish and thinking Californian desires to have the immigration of certain races stopped, but the hookworm as a basis for permanent exclusion will not stand the test of a challenge from other nations.

Will Syphilis Be Reported?

When the California State Board of Health passed the resolutions (printed on page 239) placing syphilis and gonococcus infections on the reportable list it made the first official move in a long, tedious campaign. It remains to be seen whether physicians have the "nerve" to enlist in this greatest of all public health battles. The State now has a thriving and fearless association, composed largely of laymen, which has prepared the way for active work. The State Board of Health has now declared its position. The physicans of California have it in their power to make the eradication of these diseases a success.

Results of Vaccination in New York City.

A statement recently reached the California State Board of Health which was so remarkable that the Department of Health, City of New York, was asked to confirm it. It was asserted that a comparison of names of children who had been vaccinated in the public schools of New York City with a list of patients having been reported to the Board of Health during the past ten years showed that not a single name on the successful vaccination list of the schools appeared on the smallpox list of that city. In a letter from Walter Bensel, M.D., Sanitary Superintendent, Department of Health of the City of New York, he says: "Your letter relative to vaccination was received, and I desire to inform you that the statement that none of the children of school age who contracted smallpox in this city had been successfully vaccinated in school prior to infection, is quite true. Investigation was made in each case immediately after the admission of the child to the hospital, and always showed for some reason the child had escaped vaccination in school."

Vaccination and Lockjaw.

Various statements as to the occurrence of lockjaw (tetanus) have been published by antivaccinationists since the appearance of the State Board of Health Bulletin of August, which was devoted to the subject of Vaccination. In this connection the work of Voigt, Director of the Hamburg Vaccine Institute, is of great interest, for his records have been most carefully kept over a period of years. He is authority for the statement that out of 589,586 school children vaccinated and revaccinated there was only one case of tetanus, and that followed a fall which the child received subsequent to vaccination.

Tuberculosis in Milk.

Some recent investigations in Chicago made by Dr. F. O. Tonnery, Director of the Municipal Laboratories, are of the greatest importance to the general public. In July and August, 1909, a series of tests were carried on in order to ascertain the number of milk samples from various sources of city supply which contained the germs of tuberculosis. Of 112 milk samples tested, 10, or 8.9 per cent, were found to be tuberculous. Of 96 specimens of raw milk examined, 10, or 10.5 per cent, were found to contain these disease germs. Such results differ but slightly from those reported in other American cities. In 1909 Hess examined 107 samples of market milk in the city of New York and found that 17, or 16 per cent, contained tubercle bacilli. In the city of Washington Anderson examined 223 samples and reported that 16, or 6.72 per cent, were tuberculous. The Bureau of Animal Industry reports two positive cases out of thirty-six specimens of milk examined, or 7.7 per cent. Goler found that about 5 per cent of the milk supply of Rochester, New York, was thus infected. Out of a total of 551 samples reported on in various cities of this country 46 have been found to contain the germs of tuberculosis, or 8.3 per cent. These are startling statements and should be seriously considered by every thinking citizen. There is need of immediate protection of the public from milk supplies, and Chicago is meeting the situation by an ordinance providing that no milk shall be sold in that city which is not obtained from tuberculin-tested cows. The ordinance further provides that within five years from its passage, January 1, 1909, to January 1, 1914, milk not obtained from tuberculin-tested cows may be sold, provided that it is first pasteurized according to the regulations of the Board of Health. Such an ordinance is direly needed in our own State, where the percentage of tuberculosis in cattle runs high. This question should not only be food for thought, but should demand, on the part of those who have the interests of the people's welfare at heart, immediate action.

FACTS, TERSELY STATED.

“Without Health, life is no life.”—*Rabelais.*

“National hygiene and preventive measures can rid mankind of disease.”—*Metchnikoff.*

“Hygiene can prevent more crime than any law.”—*Hugo Munsterberg.*

“A state which will not prevent what can be foreseen is open to indictment.”—*Munsterberg.*

“The preservation of national vigor should be a matter of patriotism.”—*Roosevelt.*

“Health is the essential factor in productiveness, prosperity and happiness, and hence in the advancement of civilization.”—*Sir Frederick Treves.*

“Sanitary instruction is even more important than sanitary legislation.”—*Earl F. Derby.*

“There is a budget which we pay with frightful regularity; it is that of unnecessary disease and premature death.”—*Irving Fisher.*

“It is within the power of man to rid himself of every parasitic disease.”—*Pasteur.*

THE CONSERVATION MOVEMENT.

1. RECENT ADVANCES IN SANITARY ENGINEERING.

By **Ned D. Baker**, Engineer Inspector, State Board of Health.

MONTH'S PROGRESS IN MUNICIPAL SANITATION.

The following items are compiled from the files of local newspapers for further investigation and report by the Board:

Anaheim will vote on the sewer bonds again this month. This is one of the largest towns in California where there are no sewers, and a victory for the bonds is confidently hoped for.

Calexico has voted $35,000 bonds for a sewer system.

Coalinga has passed bonds, $40,000 for sewers, $40,000 for water. F. J. Boland, engineer.

Colusa. The new water works have been connected up with the flush tanks of the new sewer system and both will be in operation shortly. J. W. Kearth, engineer.

Corning passed the bonds for both water and sewers by a big majority. Sewers, $22,000; water, $48,000. W. F. Luning, engineer.

Emeryville has authorized a storm sewer to cost $13,000.

Fresno has voted to annex the Belmont Addition, and will spend $36,775 for sewers in the section.

La Mesa Springs Sewer Association has enlarged its capital to $24,000, and will build more sewers.

Lemoore. The Chamber of Commerce is taking up the sewer question and will figure on sewering the town.

Maricopa has now a Maricopa Sanitary Company to study the sewer question.

Monrovia, after a strenuous campaign, passed the bonds for a $120,000 sewer system and disposal plant.

Oak Park. The question of sewers in Oak Park is being considered by local health authorities.

Orange has voted bonds for $16,000 for building sewers.

Petaluma. The condition of the creek has again brought up the question of sewer improvements for discussion. A system of intercepting sewers is advocated to carry the foul matter into tidewater of the creek below town.

Reedley. Dr. G. L. Long, County Health Officer, points out the need of sewers in Reedley. It is unincorporated.

Rio Vista has completed the well to furnish water for the town, and the tests proved it satisfactory. A sewer system will be the next move.

Roseville. Bids are called for on the new sewer system. Plant to include septic tank and contact beds, one of the very few such in the State. Engineer, V. S. Marshall.

Santa Paula. The bond issue of $45,000 for sewer system was carried, and bids are asked to buy the bonds.

Sonoma. The $20,000 bonds for the sewer system have been sold and work will soon begin. Engineer, Newton V. V. Smythe.

Whittier. The new sewer system and disposal works are reported as completed and in proper working order.

Winters has taken up the question of sewering the town and has an engineer working on estimates. Cost to be about $20,000.

ANNOUNCEMENT—SYPHILIS TO BE REPORTABLE.

Whereas, It is the duty of the California State Board of Health to encourage and maintain a progressive campaign against all communicable and avoidable diseases which may endanger the health of the citizens of the State; and

Whereas, The communicable diseases due to syphilis and to gonococcus infections are among the most prevalent and most harmful known to medical science; and

Whereas, The policy of the State Board of Health, of physicians, and of educators, has hitherto been one of silence on this subject; therefore, be it

Resolved, That the California State Board of Health declares that beginning January 1, 1911, syphilis and gonococcus infections shall be reportable, and shall be placed on the list of communicable diseases which local boards of health and health officers are required to report to the Secretary, it being provided, however, that until further action by this Board, physicians may report the facts concerning these diseases by office numbers instead of names of patients; be it further

Resolved, That this Board officially calls the attention of the citizens of California to the contagious and infectious nature of these diseases, and requests their coöperation in combating them by every available means—educational, sanitary, medical, social and moral.

By order of the Board.

Signed: WILLIAM F. SNOW, Secretary.

October 1, 1910.

CONFERENCE OF CALIFORNIA PUBLIC HEALTH OFFICIALS.

The annual conference of California Public Health Officials will be held in San Diego, November 16th to 19th, inclusive, in joint session with the California League of Municipalities. This meeting promises to be the most successful and profitable that either of these associations has ever held. San Diego can not be excelled as a place for meeting, and the citizens have planned to make the occasion one of never to be forgotten pleasure for all those who attend.

For nearly ten years the health officials and interested laymen of California have met annually somewhere in the State to discuss health problems. In April, 1910, those present at this annual gathering voted to organize a permanent working body to be known as the California Public Health League, for the purpose of providing a clearing house for the various health conservation movements; and the State Board of Health was urged to organize an annual conference of health officials for the advancement of their technical knowledge and methods of work. In September, 1909, the California League of Municipalities voted to establish a department of public health, and invited the Secretary of the State Board of Health to accept the chairmanship of the section. The State Board of Health subsequently arranged to make this section the basis for the conference of all health officials of the State.

The following call has been sent out to all boards of supervisors, boards of city trustees, and boards of health:

CALIFORNIA STATE BOARD OF HEALTH.

OFFICE OF THE SECRETARY.

To County Supervisors and City Boards of Trustees of California.

The California State Board of Health requests your participation in a conference on health administration, to be held in San Diego November 16-19, 1910.

The League of California Municipalities meets in San Diego at this time, and will send out an invitation to all cities in the League to send their various city officials to this convention as delegates. You are familiar with the good results which have followed the past conventions of this League, and it is hoped that even greater progress in developing policies of economy and efficiency in municipal administration will follow this meeting. The State Board of Health has decided to issue a call for a joint conference of county and city health officials to be held simultaneously with the League meeting. The program will cover four days, November 16th to 19th, inclusive, and will be devoted to such questions as the following:

1. Standard regulations for quarantine.
2. What diseases must be reported.
3. Duties of physicians to the public and to the health officer in matters of public health.
4. Methods of garbage disposal in cities and on the farm.
5. Reciprocity between the city and county boards of health in controlling milk, vegetable, and meat supplies.
6. What deaths should require post mortem examinations and coroner's inquests.
7. Needed public health legislation.

Every trustee or supervisor knows many instances in which needless expense and much friction have been caused by disagreement of county and city health officers over questions of quarantine or other public health matters. The State Board of Health believes that their attention needs only to be called to this conference to elicit approval of sending delegates from their respective sections of the State. If each board of trustees and supervisors would assume the traveling expense of its delegates, the conference would be assured of full representation from the entire State, and correspondingly greater efficiency in its work.

The State Board, therefore, urgently recommends that each county and city in California be represented by at least one delegate to the Conference of California Health Officers.

By order of the Board.

Respectfully submitted.

WILLIAM F. SNOW, Secretary.

NOTE.—A railroad rate of one and one third is available for those attending this conference by securing a proper blank from the agent before leaving for San Diego.

A RECOGNITION OF CALIFORNIA RED PLAGUE SOCIETY.

From the Medical Record, New York, March 19, 1910.

CALLING A SPADE A SPADE.

To the Editor of the Medical Record.

SIR: It is most refreshing to learn from the March 5th issue of the *Survey* that out in the glorious climate of the Pacific coast a society has been organized to deal with matters venereal, which boldly calls itself the California Association for the Study and Prevention of Syphilis and Gonorrhea. The association is composed of forty members, one half of whom are physicians; and a woman, Dr. Frances M. Greene, has been chosen as president. The avowed purposes are to treat venereal diseases as frankly infectious; to habituate the public to hear and speak of them without embarrassment, and thus to drag them into the light, where all men may know and avoid them.

The first public meeting was held in January, and an audience of several hundred men and women listened to addresses by Dr. David Starr Jordan of Stanford University and other prominent men. In conjunction with the assembly was an exhibit, prepared by the secretary of the State Board of Health. It is interesting to note that no account of the affair appeared in the daily papers, although several reporters were present. One local paper, however, published an account of the meeting.

But a campaign of publicity and education is bound to succeed. There is every reason why venereal diseases should be dealt with in a candid and straightforward manner. All mystery and a world of humbuggery would be swept away by open discussion and timely instruction. Some day, perhaps, young men will know that chastity is compatible with perfect health, and "what every woman knows" will include a knowledge of the significance of venereal disease.

ADDISON W. BAIRD, M.D.

New York.

HEALTH CONSERVATION IN THE MAGAZINES.

By HERBERT COOLIDGE.

ALCOHOLISM.

The First Farm Colony for Drunkards. By James Ford in *The Survey* for October 1. A critical study of penal and curative measures employed by Massachusetts in dealing with inebriates. This article presents material which will be of particular interest and value to students of public health and public welfare problems. Several other articles on the care and cure of drunkards appear in the same issue of *The Survey.*

Alcoholism and Disease. By Charles P. Emerson, M.D., in *The Survey* for October 1st. Discusses the direct effect of alcohol on the mentality, on disease resistance, and the nerve and body tissues; also the cure of alcoholism. This article is of especial worth because of the careful differentiation between social and physical aspects of the drinking problem.

ARTICLES OF INTEREST TO PHYSICIANS.

The Contribution of Experimental to Human Poliomyelitis. By Simon Flexner, M.D., in *Journal American Medical Association* for September 24th. Treats of infantile paralysis under heading: "Contagiousness," "Experiments With Monkeys," "Clinical Effects of Inoculations," "Pathology," "The Virus," "Prognosis," "Modes of Infection," "Immunity" and "Production of a Serum." A technical scientific article of timely interest to California physicians.

How to Study Medicine. By Henry S. Pritchett, in *The Outlook* for October 1st. Warns young men against entering an already overcrowded profession through the doors of advertising proprietary medical schools; suggests the motives and the preparation essential to success in the medical profession. This article will prove especially suggestive to all who think of becoming physicians.

The Nature of Fatigue: The Physiology and Psychology of Being Tired. By Frederic S. Lee, Ph.D., in *Scientific American* for October 8th. A technical treatise which describes laboratory experiments with muscles, discusses the phenomena of fatigue in various organs and tissues, and analyzes the fatigue theories of William James Fletcher, Chittenden, Fisher, and Metchnikoff. This article will appeal principally to scientific readers.

Medical Education in the United States and Canada. By Frederic S. Lee, in *Educational Review* for October. A comprehensive review of Abraham Flexner's report to the Carnegie Foundation for the Advancement of Teaching which may be profitably read by those interested in medical education.

ARTICLES OF INTEREST TO PUBLIC HEALTH WORKERS.

A Brief Report of the Nebraska Epidemic of Poliomyelitis. By H. M. McClanahan, M.D., in *Journal American Medical Association* for October 1st. The material presented is based on correspondence with 213 families and the reports of physicians on 999 cases. The data is differentiated as to percentage of deaths, portions of body affected in cases recovering, and the clinical varieties manifested by the disease. A discussion follows on the diagnosis and nature of the disease, and means of control are suggested. The information presented in this article will be of especial value to health authorities and physicians.

A Supreme Court of Science. By Professor J. Pease Norton in *The Popular Science Monthly* for October. Urges that such questions as antivivisection and antivaccination could be economically and satisfactorily settled if submitted to a "supreme court of science before a grand jury of twenty-five scientific and engineering experts drawn from the various walks of the scientific professions." A thought provoking article which will be of especial interest to all concerned with public health problems.

The Ethics of Food: The Stomach and Public Morality. By H. W. Wiley, Ph.D., in *Scientific American* for October 8th. Discusses the enforcement of the Food and Drug Act from the ethical, legal, and public health standpoint. This article will be of interest chiefly to special students in this line of study.

Paddling Life Preservers. In *Popular Mechanics* for October. Demonstrates with illustrations the workings of "a new life-saving apparatus called the 'sleigh buoy,' which weighs only fifteen pounds and can be easily carried on the run into deep water, then paddled to the person in danger."

HYDROPHOBIA.

Is Your Dog Mad? By Arno Dosch in *Pearson's Magazine* for October. Tells of the growing prevalence of hydrophobia in America and how other countries have stopped its spread; describes the symptoms of rabid dogs and the treatment for human beings thus infected. A well written article of timely interest which deserves an especially wide circulation in California.

GENERAL HEALTH.

The Poison Bugaboo. By Samuel Hopkins Adams in *Everybody's Magazine* for October. Enumerates cases of poisoning by reptile bites and insect stings, and cites evidence that rattlesnakes, Gila monsters, scorpions and tarantulas are not so venomous as the little "red spot" spider, or the harlequin snake and Sonora coral snake, which are popularly supposed to be harmless. In conclusion, the writer states that the malaria mosquito "is the one venomous creature in the country which may be justly termed a public peril in the widest sense." A carefully prepared article clearly and forcefully presented which will prove interesting and profitable reading to the general public.

Husbanding the Nation's Manhood. Under department "The March of Events" in *The World's Work* for October. Develops the theme: "There is in the study of immigration and birth statistics a plain lesson for the old American stock: It is Extinction or Eugenics." This is a strong presentation of a vital subject and merits a wide reading.

The Owen Bill for the Establishment of a Federal Department of Health and Its Opponents. By S. Adolphus Knopf, M.D., in *The Popular Scientific Monthly* for October. Bases argument in favor of the Owen Bill on the personnel of the forces which worked for and against it. A clearly stated article that merits wide circulation.

Exercise and Rest. By Luther Halsey Gulick in *The North American Review* for October. Develops the thesis that exercising for the sake of exercise is not practicable, as it is liable to be discontinued, and is not as healthful as are activities prompted by the play spirit. An exceptionally well written and instructive article that deserves a wide reading.

The Healthfulness of Housework. By Jean Williams, M.D., in *Woman's Home Companion* for October, under department "The Doctor's Page." Practical suggestions for homemakers on how housework may be lightened and made pleasant.

The New Mind Cure Based on Science. By H. Addington Bruce, in *The American Magazine* for October. A discussion of "scientific psychotherapy" as an agent in the treatment of mental and nervous diseases.

The Common Sense of Vivisection. By Allan L. Benson in *Pearson's Magazine* for October. "An explanation of just what the much railed-at-vivisection has done for humanity." An excellently written article which deserves a reading by all.

The Portentous Factors in the Month's Cholera Scare. Under department "Science and Discovery" in *Current Literature* for October. Reviews articles from English medical journals. Discusses the menace of cholera bacilli carriers, also problems connected with the treatment of cholera patients.

The Campaign of Hope. By James Jenkins, Jr., in *Woman's Home Companion* for October. Tells how "ten thousand lives were saved last year by an organized intelligent fight against tuberculosis," and shows how "this good work can be continued even more effectively." The editor states that this article is prepared for the express purpose of informing specially interested persons on the public and personal means of preventing and curing tuberculosis.

An Open-air House. By W. K. Shilling, in *Country Life in America.* This article gives plans and estimates of construction for a $10,000 fresh-air home.

Safer Plumbing for Half the Cost: Some Facts About Sanitation Which Every House Builder and Home Owner Ought to Know. By J. Pickering Putnam in *Country Life in America* for October. Advocates the "use of the so-called antisiphon traps" on the grounds of economy and bacteriological efficiency. A suggestive article which may be read with profit by those qualified to pass judgment on the material submitted.

DIET.

Wholesome Luncheons to Take to School. By May Ellis Nichols, in *The Ladies' Home Journal* for October 1st.

On Fasting. "A letter to the editor of the *Contemporary Review*" (for September) from Upton Sinclair. Recommends fasts of a week's duration for every ailment but tuberculosis, and tells people who wish to fast without discontinuing work: "It does no harm to try." A "fad" article capable of doing a vast amount of harm.

The Way to Health: My Experience With "Fletcherism." By C. M. Cady in *The World's Work* for October. A college professor's account of relief from chronic indigestion following a trial of Horace Fletcher's dietary principles. The author gives his individual experience for what it is worth; but individual experiences are worth little.

SCHOOL HEALTH PROBLEMS.

How I Run My School. By William E. Watt in *The Ladies' Home Journal* for October. A Chicago public school principal tells of an experiment in which parents were given the choice of letting their children attend fresh-air rooms (unheated until December) or ordinary closed-in rooms. In the fresh-air rooms "all things were to be subordinate to getting the children into perfect physical condition." An account of original methods and striking results, the worth of which may be best judged by educators.

Rebuilding the Child World. By Rheta Childe Door in *Hampton's Magazine* for October. "What is being done in the city schools to make child life healthier and saner." Tells how children have been injured by school buildings that were improperly constructed and furnished, and by faulty physical exercise systems as opposed to "what you find in an ideal school," and "ideal conditions for public school athletics" and "the new conception of a playground." This article deserves to be widely read by parents, schoolmen, and public health workers.

Hygiene in European Schools. The *Literary Digest* for October 8th. Review of an article translated from the French which will be of interest to educators.

HEALTH OF CHILDREN.

What Young Mothers Ask Me. By Emelyn L. Coolidge, M.D. A department in *The Ladies' Home Journal* devoted to answers to published correspondence. The auxiliary department, *The Young Mother's Registry* discusses problems of infant care.

Some Facts Concerning Certain Undernourished Children. By Frances Perkins in *The Survey* for October 1st. A discussion of malnutrition based on case investigations.

DEPARTMENT REPORTS.

REPORT OF BUREAU OF VITAL STATISTICS FOR SEPTEMBER.

George D. Leslie, Statistician.

Marriages.—The marriages reported for September number 2,223, as compared with 2,083 for the same month last year. For an estimated State population of 2,056,190 in 1910, the September total represents an annual rate of 13.2 per 1,000 inhabitants, against 12.1 for August.

The monthly totals were highest for the following counties: Los Angeles, 504; San Francisco, 398; Alameda, 231; Sacramento, 112; San Diego, 88; Santa Clara, 81; Orange, 80; Marin, 64; and Fresno, 50.

The aggregate for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo) was 729.

Births.—For September there were reported 2,796 living births, representing an annual birth rate of 16.5 per 1,000 population, as compared with 15.9 for the preceding month. The corresponding total for the same month the year before was 2,710.

The totals were highest for the following counties: Los Angeles, 649; San Francisco, 543; Alameda, 330; Santa Clara, 103; Sacramento, 100; San Diego, 82; San Bernardino, 79; Fresno, 78; and Orange, 58.

Altogether 1,774 births were registered in the twenty-six freeholders' charter cities, the leading cities being as follows: San Francisco, 543; Los Angeles, 463; Oakland, 207; San Diego, 69; Berkeley and Sacramento, each 66; San Jose, 48; Fresno, 36; San Bernardino, 33; Pasadena, 30; and Alameda, 27.

The aggregate for San Francisco and the transbay cities (Alameda, Berkeley, and Oakland) was 843, and for San Francisco and the other bay counties was 970. Similarly, the total for Los Angeles and neighboring chartered cities (Long Beach, Pasadena, and Santa Monica) was 533, and for the entire county was 649.

Deaths.—Exclusive of stillbirths, altogether 2,472 deaths were reported for September, this number including 237 delayed certificates for deaths in August and earlier months. The 2,472 deaths give an annual death rate of 14.6, or the same as for the preceding month. The corresponding total for the same month last year was 2,353.

The September totals were highest for the following counties: Los Angeles, 530; San Francisco, 455; Alameda, 256; Sacramento, 98; Santa Clara, 94; Fresno, 79; San Joaquin, 66; San Bernardino, 64; and San Diego and Sonoma, each 58.

There were altogether 1,361 deaths in the twenty-six chartered cities, the highest totals being as follows: San Francisco, 455; Los Angeles, 332; Oakland, 159; Sacramento, 52; San Diego, 46; Stockton, 39; Fresno, 30; and Pasadena, 29.

The aggregate for the urban district (San Francisco and the transbay cities) was 654, and for the entire metropolitan area (San Francisco and the other bay counties) was 778. Similarly, the total for Los Angeles and neighboring chartered cities was 397, and for the whole county was 530.

Causes of Death.—The following table shows the distribution of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: September.

Cause of Death.	Deaths: September.	Proportion per 1,000. September.	Proportion per 1,000. August.
All Causes	2,472	1,000.0	1,000.0
Typhoid fever	53	21.4	20.0
Malarial fever	15	6.1	6.7
Measles	4	1.6	1.6
Scarlet fever	7	2.8	0.0
Whooping-cough	17	6.9	11.8
Diphtheria and croup	13	5.3	7.1
Influenza	3	1.2	1.2
Other epidemic diseases	16	6.5	7.1
Tuberculosis of lungs	274	110.8	126.3
Tuberculosis of other organs	46	18.6	18.4
Cancer	188	76.1	56.9
Other general diseases	117	47.3	44.3
Meningitis	29	11.7	16.1
Other diseases of nervous system	213	86.2	85.9
Diseases of circulatory system	349	141.2	157.3
Pneumonia and broncho-pneumonia	165	66.7	51.4
Other diseases of respiratory system	60	24.3	18.0
Diarrhea and enteritis, under 2 years	97	39.2	32.9
Diarrhea and enteritis, 2 years and over	19	7.7	8.2
Other diseases of digestive system	144	58.3	52.6
Bright's disease and nephritis	140	56.6	58.5
Childbirth	14	5.7	11.8
Diseases of early infancy	95	38.4	37.7
Suicide	52	21.0	24.3
Other violence	215	87.0	95.7
All other causes	127	51.4	48.2

For September there were reported 349 deaths, or 14.1 per cent of all, from diseases of the circulatory system, and 320, or 12.9 per cent, from various forms of tuberculosis, heart disease thus leading tuberculosis considerably.

Other notable causes of death in September were as follows: Violence, 267; diseases of the digestive system, 260; diseases of the nervous system, 242; diseases of the respiratory system, 225; cancer, 188; Bright's disease and nephritis, 140; and epidemic diseases, 128.

The deaths from epidemic diseases were as follows: Typhoid fever, 53; whooping-cough, 17; malarial fever, 15; scarlet fever, 7; measles, 4; and all other epidemic diseases, 19. Typhoid fever was the leading epidemic disease for September, as for the preceding three months.

The deaths from the three leading epidemic diseases reported for September were distributed by counties as follows:

TYPHOID FEVER.

Alameda	3
Butte	1
Colusa	2
Fresno	5
Kern	1
Kings	2
Los Angeles	7
Marin	2
Nevada	2
Orange	2
Placer	1
Riverside	4
Sacramento	2
San Bernardino	2
San Francisco	10
Santa Barbara	1
Santa Clara	1
Santa Cruz	1
Siskiyou	2
Sonoma	2
Total	53

WHOOPING-COUGH.

Alameda	3
Contra Costa	1
Los Angeles	2
Mendocino	3
Napa	1
Nevada	1
Sacramento	1
San Francisco	1
San Joaquin	1
Santa Clara	2
Santa Cruz	1
Total	17

MALARIAL FEVER.

Alameda	1
Butte	3
Madera	1
Placer	1
Plumas	1
Sacramento	2
San Francisco	2
San Joaquin	1
Tehama	2
Yuba	1
Total	15

Geographic Divisions.—Data for geographic divisions, including the metropolitan area, or "Greater San Francisco," are as follows:

Deaths from Main Classes of Diseases, for Geographic Divisions: September.

Geographic Division.	DEATHS: SEPTEMBER.										
	All Causes	Epidemic Diseases	Tuberculosis (All Forms)	Cancer	Diseases of Nervous System	Diseases of Circulatory System	Diseases of Respiratory System	Diseases of Digestive System	Bright's Disease and Nephritis	Violence	All Other Causes
THE STATE	2,472	128	320	188	242	349	225	260	140	267	353
Northern California	326	27	28	20	29	48	25	27	15	52	55
Coast counties	165	7	17	12	21	30	11	13	7	29	18
Interior counties	161	20	11	8	8	18	14	14	8	23	37
Central California	1,380	69	171	101	124	207	145	148	78	152	185
San Francisco	455	21	52	38	33	84	50	48	22	49	58
Other bay counties	323	11	35	36	25	54	34	30	22	28	48
Coast counties	180	13	31	11	19	18	24	18	11	14	21
Interior counties	422	24	53	16	47	51	37	52	23	61	58
Southern California	766	32	121	67	89	94	55	85	47	63	113
Los Angeles	530	17	84	52	55	67	43	55	30	39	88
Other counties	236	15	37	15	34	27	12	30	17	24	25
Northern and Central California	1,706	96	199	121	153	255	170	175	93	204	240
Metropolitan area	778	32	87	74	58	138	84	78	44	77	106
Rural counties	928	64	112	47	95	117	86	97	49	127	134

REPORT OF PURE FOOD AND DRUG LABORATORY FOR SEPTEMBER.

By Professor M. E. Jaffa, Director.

During the past month the work of the Laboratory, has been along miscellaneous lines, including the examination and analysis of extracts, eggs, meats, rice (in order to see whether or not it is coated or polished with the ingredients); ginger ale, etc.

Certificate No.	Material.	Violation.	Name of Dealer.	Locality.
1012	Ice cream, vanilla	Mislabeled. Low butter fat	Alex. Levin (Bohemian Bakery)	Los Angeles
1018	Icino	Adulterated. Salicylic acid	W. S. Hook, president Southern California Supply Co.	Los Angeles
1019	Egg compound	Mislabeled. 1-pound equal 7 dozen eggs	Cream Mellow Manufacturing Co.	Los Angeles
1022	Headache powders	Mislabeled. Acetanilid	Pacific Pharmacy	Santa Monica
1023	Headache powders	Mislabeled. Acetanilid	Sun Drug Co.	Pasadena
1024	Paregoric	Mislabeled. Ethyl alcohol. Morphine	Venice Drug Co., Inc.	Venice
1025	Chopped meat	Adulterated. Sulphate dioxide	S. Vutetas	San Francisco
1029	Eggs. Fresh ranch	Mislabeled. Not fresh	C. H. Mecusker	Los Angeles
1030	Eggs. Fresh	Mislabeled. Not fresh	Berkhoff & Hershkowitz	Los Angeles
1031	Eggs. Ranch	Mislabeled. Not fresh	E. C. Seeley	Los Angeles
1032	Eggs. Fresh Eastern	Mislabeled. Not fresh	M. D. Seaver	Los Angeles
1033	Eggs. Fresh Eastern	Mislabeled. Not fresh	Chas. F. Backus	Los Angeles
1034	Eggs. Fresh Eastern	Mislabeled. Not fresh	Kemper & Edwards	Los Angeles
1035	Eggs. Fresh Eastern	Mislabeled. Not fresh	Young's Market Co., Incorporated	Los Angeles
1036	Eggs. Fresh ranch	Mislabeled. Not fresh	Ralph's Grocery Co.	Los Angeles
1037	Eggs. Ranch	Mislabeled. Not fresh	K. H. Altoon	Los Angeles
1038	Extract vanilla	Mislabeled. Not pure.	E. C. Kennedy	Riverside

The following decision and notices of judgments have been received at the Laboratory since the publication of the last Bulletin. Full decisions and notices may be obtained by addressing the Director of State Food and Drug Laboratory, Berkeley, Cal.

FOOD INSPECTION DECISION NO. 126.

SALTS OF TIN IN FOOD.

The attention of the board has been directed to canned goods which contain salts of tin derived from the solvent action of the contents of the package upon the tin coating. Pending further investigations on this question all canned goods which are prepared prior to January 1, 1911, will be permitted to enter and pass into interstate commerce without detention or restriction in so far as their content of tin salts is concerned. All foods which are canned subsequently to January 1, 1911, will be permitted importation and interstate commerce if they do not contain more than 300 milligrams of tin per kilogram, or salts of tin equivalent thereto. When the amount of tin, or an equivalent amount of salts of tin, is greater than 300 milligrams per kilogram, entry of such canned goods packed subsequently to January 1, 1911, will be refused, and if found in interstate commerce proper action will be taken.

It is the opinion of the board that the trade will experience little hardship in adjusting itself to this condition, as the results of examinations made by the Bureau of Chemistry of various types of canned goods indicate that in a very large majority of cases inconsiderable quantities of tin are found, well within the limit herein set.

NOTICES OF JUDGMENTS.

Notice of Judgment No. 490.—Sardines, misbranding of. Label bore statement, "These sardines are extra selected fish, fried by French process in the finest quality salad oil," which statement was false because said fish were not packed in salad oil but in cotton-seed oil.

Notice of Judgment No. 491.—Macaroni, misbranding of. Labeled in words in a foreign language so as to lead the purchaser to believe the food was a foreign product, whereas, in fact, it was manufactured in the United States.

Notice of Judgment No. 493.—Spaghetti, misbranding of. Label would give false and misleading impression to purchaser that said food product was of foreign manufacture, when, as a mater of fact, said product was not of foreign manufacture.

Notice of Judgment No. 495.—"Flag Salt," misbranding of (drug product). Label states that product positively cures all forms of headache and neuralgia and does away with the use of morphine, opium, chloral, etc., all of which statements are false and misleading.

Notice of Judgment No. 496.—Plaster Pad, misbranding of. Label stated that said compound drug possessed qualities which would cure or tend to cure the disease of hernia or rupture, when, as a matter of fact, said drug did not possess such qualities.

Notice of Judgment No. 497.—Suits to restrain in seizures, under section 10 of the act of complainants' flour bleached by the Alsop process.

Notice of Judgment No. 498.—Bleached—Flour.

Notice of Judgment No. 499.—Jam—Compound Anderson's, misbranding of. Label represented jam to be blend or compound, containing fruit 30%, sugar 20%, apple juice 25%, glucose 25%, which statement was false.

Notice of Judgment No. 500.—Extract lemon, misbranding of. Label represented each bottle to contain 4 ounces, when, as a matter of fact, the quantity contained in said bottle was over 6 per cent short.

Notice of Judgment No. 501.—Damiana Nerve Invigorator, misbranding of. Said drug failed to bear statement of the quality or proportion of alcohol therein.

Notices of Judgments Nos. 502, 503, 510, 512, 514, 515, 517, 521, 522, 523, 524, 525, 526, 527, 528.—Adulteration of milk. Water mixed to reduce and lower quality; consisted of filthy, decomposed animal substances, etc.

Notice of Judgment No. 504.—Adulteration of evaporated apples. Apples had been soaked in water to increase weight.

Notice of Judgment No. 505.—Adulteration and misbranding of lemon oil. A vegetable oil, known as sesame oil, had been mixed and packed therewith as to reduce and lower its quality and strength.

Notice of Judgment No. 506.—Misbranding of codfish strips. Label stated, "Choice Codfish strips packed for Mason, Ehrman & Co., Portland, Oregon," on the side, "Norway Cod Strips." Whereas, the fish contained in said boxes were caught in the waters of the Pacific Ocean, in vicinity of Pacific coast of the American continent, and packed and cured by Union Fish Co., San Francisco, Cal.

Notice of Judgment No. 507.—Misbranding of a drug product—"Cancer Cure." Misleading statements; proportion of cocaine used, etc. Liquid poppy, alch.-opium, etc.

Notice of Judgment No. 508.—Adulteration of preserved whole eggs. Boric acid used—deleterious ingredient.

Notice of Judgment No. 509.—Adulteration and misbranding of preserves (Loganberry). Label states, "Liberty Brand Preserved Loganberries preserved with one-tenth of 1 per cent Benzoate of Soda, packed by Seattle & Puget Sound Packing Co., Seattle, Wash." Substitution of commercial glucose, so as to reduce, lower, and injuriously affect quality and strength of food.

Notice of Judgment No. 510.—Misbranding of canned corn. (Short weight.)

Notice of Judgment No. 513.—Adulteration of cream. Addition of formaldehyde, which rendered said article injurious.

Notice of Judgment No. 516.—Misbranding of black pepper. As to weight.

Notice of Judgment No. 518.—Misbranding of canned tomatoes. (Short weight.)

Notice of Judgment No. 519.—Adulteration and misbranding of evaporated apples. Consisted in part of filthy, decomposed vegetable substance, moldy and rotten portions of apples, worms, etc.

Notice of Judgment No. 520.—Adulteration and misbranding of peach extract. Substitution of imitation peach extract.

Notice of Judgment No. 529.—Adulteration of cloves. Oil of cloves had been abstracted therefrom, and said cloves were colored, coated and stained in a manner whereby damage to and inferiority of the same were concealed.

Notice of Judgment No. 530.—Adulteration and misbranding of coffee. Addition of chicory. Label would convey that article was pure coffee.

REPORT OF HYGIENIC LABORATORY FOR SEPTEMBER.

W. A. Sawyer, M.D., Director.

Gratifying results in the suppression of communicable diseases have rewarded the efforts of Dr. C. W. Bonynge and Dr. Ernest Pring at the Branch of the State Hygienic Laboratory in Fresno during its short existence of two months. Cordial and efficient coöperation between the local health officers and the laboratory has resulted in most careful study of several outbreaks of diphtheria and typhoid and has brought about their prompt suppression. Our representatives at Fresno have been glad to advise health officers and physicians on public health topics, and, as far as their time allowed, they have supported health officers in their earnest efforts to locate through field work the sources of contagion.

It was noted that invalids suffering from typhoid were coming into Fresno from the country and from other towns. These cases were traced back to their sources. In some cases the sale of milk from infected regions was stopped and the water supply in the afflicted districts was examined. One outbreak was traced to a polluted well by local investigations by the health officer and Dr. Pring and by a water analysis made by the main laboratory in Berkeley.

The large number of examinations for diphtheria in the vicinity of Fresno does not indicate that the disease is unusually prevalent. The figures in the accompanying report mean increased activity in fighting the disease, and therefore an improved state of affairs. Many of the cultures were taken in order to locate and to exclude from the schools of infected regions those healthy children who kept the epidemic alive by harboring and distributing the germs. Action of this sort can soon make Fresno remarkable for its good health record.

The Fresno Branch Hygienic Laboratory does the routine work for the following counties: Kern, Kings, Tulare, Fresno, Madera, Merced, Mariposa. Physicians who anticipate sending specimens are requested to procure in advance from the laboratories mailing outfits accompanied by blank cards, which should be filled out in each case. It is illegal to send bacteriological specimens through the mails in ordinary containers. Animals' heads to be examined for rabies should be packed in ice and expressed to the State Hygienic Laboratory in Berkeley. With the package should be sent the name and address of the sender. If a water supply is suspected of being contaminated, requests for bacteriological examinations should be made to Dr. Wm. F. Snow, Secretary of the State Board of Health at Sacramento. With his approval the director of the Laboratory will send by express, at the expense of the recipient, the container, sterile bottles and directions necessary for the proper taking and packing in ice of a sample for examination. Samples taken in the ordinary way will not be examined, as contamination and the multiplication of bacteria during transit result in the examination giving more unfavorable results than are justified.

Summary of Examinations made in the California State Hygienic Laboratory during the month of September, 1910.

Condition suspected	Positive.	Negative.	Total.
Main Laboratory at Berkeley:			
Diphtheria	14	25	39
Malaria	--	1	1
Tuberculosis	6	16	22
Typhoid	7	7	14
Rabies	--	3	3
Water pollution	3	6	9
Miscellaneous	--	3	3
			91
Fresno Branch Laboratory:			
Diphtheria	15	108	123
Malaria	1	1	2
Tuberculosis	1	3	4
Typhoid	1	2	3
			132
Los Angeles Branch Laboratory:			
Diphtheria	1	3	4
			4
Total			227

Detailed Report of the State Hygienic Laboratory for September, 1910.

Locality.	Diphtheria	Typhoid	Tuberculosis	Water	Malaria	Rabies	Miscellaneous.	Total
Auburn								1
Dr. White	1	0	0	0	0	0	0	
Berkeley								19
Dr. Bancroft	0	0	1	0	0	0	0	
Dr. Burnham	1	0	0	0	0	0	0	
Dr. Force	0	0	1	0	0	0	0	
Dr. McCleave	0	0	3	0	0	0	0	
Dr. Sawyer	2	0	2	0	0	0	1	
Dr. Shafer	0	1	1	0	0	0	0	
Dr. Stockton	1	0	0	0	0	0	0	
Dr. Reinhardt	1	2	0	0	0	0	0	
Dr. Hector	0	1	0	0	0	0	0	
Dr. Simpson	0	1	0	0	0	0	0	
Colusa								3
Dr. Poage	0	0	0	3	0	0	0	
Concord								1
Dr. Neff	1	0	0	0	0	0	0	
Corcoran								2
Dr. Peery	0	0	2	0	0	0	0	
Colton								2
Dr. Champion	1	0	0	0	0	0	0	
Dr. Pritchard	1	0	0	0	0	0	0	
Dunsmuir								1
Dr. Cornish	1	0	0	0	0	0	0	
Emeryville								1
Dr. Brennan	1	0	0	0	0	0	0	
Fresno								123
Dr. Aitken	17	0	0	0	0	0	0	
Dr. Long	93	3	1	0	2	0	0	
Dr. Manson	0	0	3	0	0	0	0	
Dr. Pring	0	0	0	4	0	0	0	
Folsom								2
Dr. Hesser	0	0	1	0	1	0	0	
Grass Valley								1
Dr. Jones	0	1	0	0	0	0	0	
Gridley								1
Dr. Thompson	0	0	0	0	0	1	0	

Detailed Report of the State Hygienic Laboratory for September, 1910—Continued.

Locality.	Diphtheria	Typhoid	Tuberculosis	Water	Malaria	Rabies	Miscellaneous	Total
Hayward								2
Dr. Galbraith	1	0	0	0	0	0	0	
Dr. Nielson	0	0	1	0	0	0	0	
Hoppa								1
Dr. Rudtorff	0	1	0	0	0	0	0	
Kelseyville								1
Dr. Upton	0	0	1	0	0	0	0	
Livermore								1
Dr. McGill	0	0	1	0	0	0	0	
Long Beach								1
Dr. Harvey	0	0	1	0	0	0	0	
Malaga								13
Dr. Long	13	0	0	0	0	0	0	
Maricopa								1
Dr. Taylor	0	1	0	0	0	0	0	
Marysville								2
Dr. Bissell	0	1	0	0	0	0	0	
Dr. Kaufman	1	0	0	0	0	0	0	
Napa								1
Dr. Geraldson	0	1	0	0	0	0	0	
Nevada City								1
Dr. Tickell	0	0	1	0	0	0	0	
Oakland								2
Dr. Jump	0	0	0	0	0	1	0	
Dr. Klonk	0	0	1	0	0	0	0	
Ontario								4
Dr. Gregory	2	0	2	0	0	0	0	
Princeton								1
Dr. Glidden (Principal High School)	0	0	0	1	0	0	0	
Oxnard								1
Dr. Pattison	0	0	0	0	0	0	1	
San Jose								4
Dr. McGinty	2	0	0	0	0	0	0	
Dr. Mislocki	1	0	0	0	0	0	0	
Dr. Simpson	0	0	0	1	0	0	0	
San Bernardino								2
Dr. Ham	1	0	0	0	0	1	0	
Santa Cruz								1
Dr. Philbrook	0	0	1	0	0	0	0	
San Quentin								6
Dr. Stone	0	4	0	0	0	0	2	
Stockton								2
Dr. Young	2	0	0	0	0	0	0	
Vallejo								21
Dr. Bond	7	0	0	0	0	0	0	
Dr. Dempsey	1	0	0	0	0	0	0	
Dr. Lain	5	0	0	0	0	0	0	
Dr. Reilly	7	0	0	0	0	0	0	
Dr. Young	1	0	0	0	0	0	0	
Yuba City								2
Dr. Peery	0	0	2	0	0	0	0	
Total								227

DEPARTMENT OF EPIDEMIOLOGY.

WILLIAM F. SNOW, M.D., Director.

A FACT AND A QUERY.

The Fact: The tabulated report below shows 400 California citizens killed and wounded in the month's battle with a few of the preventable diseases. It is not probable that this list represents more than one fifth of the total casualties. When one considers that 96, or 24 per cent, of those reported died on the battlefield, it becomes evident that this warfare against disease is no child's play.

The Query: Is it possible that by September, 1960—when the present generation shall have moved on into the mausoleums and graveyards, and California shall be peopled by a new generation—that in that far distant day health conservation will be a recognized national policy? And will there then be a new national holiday of thanksgiving and of memorial exercises for the victims of predatory parasites? If so, it is probable the newspapers will print a column headed:

> Told by the *Daily* Ancestors' Files.
> FIFTY YEARS AGO TO-DAY.
> September 30, 1910.
>
> The Secretary of the State Board of Health has just issued the vital statistics for the month. . . . . . four hundred cases of communicable diseases were reported during the month, with ninety-six deaths, but there were no serious outbreaks . . . . . .

And the editor, commenting on this, will probably write:

> "It is inconceivable that our forefathers, knowing what they then did about the prevention of disease, should have been so indifferent to this frightful loss of life and economic waste from ill health . . . . ."

Malaria has been added to the detailed tables given below, because this month it has crowded out diphtheria and measles for third place among the causes of death from the epidemic diseases. Typhoid fever remains secure in the lead, which it regained in June, after having held third place for February and March and second place for April and May. During the past year California cities have voted bonds for over $2,000,000 for new sewer and water supply construction, and more than $2,000,000 in proposed bond issues are now pending vote. Eighty-four cities and towns are represented in this list. Such items mean hard times for typhoid fever and allied water-borne diseases. The active campaign which has been waged against the fly has still further damaged the prospects of these diseases. The malaria parasite is unable to make use of any method of entering the human body, except through wounds made by the special mosquito—*anopheles*—which it has selected to be its carrier. The intelligent, businesslike, thorough fight against mosquitoes, which many California districts have made during the past summer, presents a gloomy prospect for this disease.

Of the three leading diseases for the month, therefore, whooping-cough alone seems to have an unrestrained chance for the future. Undoubtedly by December it will have won first place, and the lack of organization of public health departments, the selfishness of individual parents, and the lack of public appreciation of the dangerous character of this disease will probably enable it to maintain its position through the winter. Measles will probably struggle into second place through the same indifference on the part of the public. Diphtheria will continue its losing fight with antitoxin, and will probably not get above third place, unless it succeeds in surprising some community where no defense is made.

EPIDEMIOLOGICAL INVESTIGATIONS.

The local authorities in Plumas, Tehama, Glenn, Colusa, Sacramento, Alameda, Santa Clara, Fresno, Kings, and Riverside counties have been aided in epidemiological work during the month, but no new phases of disease transmission were recorded.

Morbidity Statistics for September.

COUNTY.	Anterior Poliomyelitis.		Typhoid.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Malaria.	
	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths
Alameda—														
Livermore														1
Alameda				1										
Berkeley	6								1					
Oakland			12	2			3			3	10			
Niles											1			
Alpine														
Amador														
Butte—														
Chico														1
Oroville														1
Rural														1
Calaveras														
Colusa—														
Colusa			7	1	5									
Rural				1										
Contra Costa—														
Martinez													6	
Richmond			1				1						1	
Rura			2						6	1			21	
Del Norte														
El Dorado														
Fresno—														
Fresno			9	4							7	2		
Rural				1										
Glenn—														
Rural					1									
Humboldt—														
Eureka					6		1							
Imperial—														
El Centro			1								2			
Calexico							1							
Kern—														
Bakersfield				1										
Kings—														
Hanford				1										
Rural				1										
Lake														

Morbidity Statistics for September—*Continued.*

County.	Anterior Poliomyelitis.		Typhoid.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Malaria.	
	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths	Cases Reported	Deaths
Los Angeles—														
Los Angeles				5				1		2		1		
Alhambra				1										
Monrovia			2											
Glendale			1											
Pasadena							1							
Pomona			2				1		7					
Santa Monica							4				1			
Rural				1					2					
Madera—														
Rural														1
Marin—														
Rural			4	2										
Mariposa—														
Mariposa									2					
Mendocino—														
Ft. Bragg										2				
Rural										1				
Merced														
Modoc														
Mono														
Monterey												1		
Napa—														
Napa City										1				
Nevada—														
Grass Valley				1									4	
Nevada City									17				13	
Rural				1						1				
Orange—														
Santa Ana			3	1										
Orange			2								1			
Rural				1										
Placer—														
Newcastle					1									
Rural				1										1
Plumas—														
Rural														1
Riverside—														
Riverside			2	2			1				2		4	
Corona				2										
Rural			1					1						
Sacramento—														
Sacramento			1	2	1		2	1		1	3			
Oak Park							7							
Rural										3				1
San Benito														
San Bernardino—														
San Bernardino			9		2				2					
Colton				1										
Redlands				1										
San Diego—														
San Diego			5		2		8				2	2		
National City											1			
San Francisco	5	2	35	10	69	1	26			1	30	6	10	2
San Joaquin—														
Stockton	1						1			1	1			
Rural							6				1			1
San Luis Obispo—														
San Luis Obispo			2											
San Mateo														
Santa Barbara—														
Santa Barbara			4	1	1	1								
Santa Clara—														
Rural			4	1		1		4		2				
San Jose							1				4			
Santa Cruz—														
Santa Cruz					1		4							
Rural				1						1				
Shasta—														
Redding							1							
Anderson											2			
Millville											1			
Sierra														

Morbidity Statistics for September—*Continued.*

COUNTY.	Anterior Poliomyelitis.		Typhoid.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Malaria.	
	Cases Reported..	Deaths....	Cases Reported..	Deaths....	Cases Reported..	Deaths....	Cases Reported..	Deaths....	Cases Reported..	Deaths....	Cases Reported..	Deaths....	Cases Reported..	Deaths....
Siskiyou—														
Dunsmuir			2											
Rural				2								1		
Solano														
Sonoma—														
Santa Rosa				1	3									
Petaluma					1						2			
Rural				1	1	1								
Trenton	1													
Stanislaus—														
Modesto							1							
Sutter														
Tehama—														
Red Bluff														1
Rural														1
Trinity														
Tulare														
Tuolumne														
Ventura														
Yolo														1
Yuba—														
Marysville											1			1
Totals	13	2	111	53	94	4	70	7	40	17	72	13	58	15

BUREAU OF PUBLIC HEALTH INFORMATION.

RAYMOND RUSS, M.D., Director.

During the past month the Bureau has furnished lectures on public health topics at the following teachers' institutes:

San Luis Obispo, October 4, 5, and 6.
Placerville, October 4, 5, and 6.
Redwood City, October 3.
Willows, October 25.

Prof. W. B. Herms, of the College of Agriculture, University of California, has been extremely active in promoting general interest in fly control and parasitology. Following is a partial list of Professor Herms' lectures upon these subjects:

Aug. 6, 1910.—Commonwealth Club, Palace Hotel, San Francisco. "Protecting California's health resources through the control of disease bearing insects."

Aug. 14, 1910.—Lutheran Men's Club, Oakland. "The control of disease,—a form of service."

Sept. 5, 1910.—Farmers' Institute, Wasco (Kern County). "Insects in their relation to public health."

Sept. 7, 1910.—American Veterinary Medical Association, annual session, Palace Hotel, San Francisco. "Parasitological investigation and instruction in semi-tropical regions, with special reference to public health."

Sept. 9, 1910.—Farmers' Institute, Capitola (Santa Cruz County). "Insects in their relation to public health."

Sept. 21, 1910.—Grattan Mothers' Club, San Francisco. "Flies, their relation to public health and their control."

Sept. 28, 1910.—Richmond High School, including seventh and eighth grades. "Insects in their relation to health, with special reference to the house fly."

Oct. 11, 1910.—Farmers' week, University Farm, Davis. "The control of disease through the control of disease bearing insects."

LIST OF COUNTY HEALTH OFFICERS.

County.	*Health Officer.*	*Address.*
Alameda	Dr. C. L. McKown	Niles
Alpine		
Amador	Dr. E. E. Endicott	Jackson
Butte	Dr. L. Q. Thompson	Gridley
Calaveras	Dr. E. W. Weirich	Angels Camp
Colusa	Dr. C. A. Poage	Colusa
Contra Costa	Dr. F. S. Gregory	Black Diamond
Del Norte		
El Dorado	Dr. S. H. Rantz	Placerville
Fresno	Dr. G. L. Long	Fresno
Glenn	Dr. J. A. Randolph	Willows
Humboldt	Dr. E. H. Bryan	Eureka
Imperial	Dr. Virgil McCoombs	Imperial
Inyo	Dr. I. J. Woodin	Independence
Kern	Dr. W. S. Fowler	Bakersfield
Kings	Dr. Ralph Motherol	Hanford
Lake	Dr. W. E. Upton	Kelseyville
Lassen	Dr. E. C. Houston	Bieber
Los Angeles	Dr. O. R. Stafford	3754 Vermont ave., Los Angeles
Madera	Dr. Mary R. Butin	Madera
Marin	Dr. J. H. Kuser	San Rafael
Mariposa	Dr. F. L. Wright	Mariposa
Mendocino	Dr. J. Litchfield	Ukiah
Merced	Dr. W. E. Lilley	Merced
Modoc	Dr. John Stile	Alturas
Mono		
Monterey	Dr. Garth Parker	Salinas
Napa	Dr. Adolph J. Kahn (County Physician)	Napa
Nevada	Dr. Carl P. Jones	Grass Valley
Orange	Dr. C. D. Ball	Santa Ana
Placer	Dr. G. H. Fay	Auburn
Plumas	Dr. F. D. Walsh	Quincy
Riverside	Dr. George E. Tucker	Riverside
Sacramento	Dr. Hugh Beattie	Elk Grove
San Benito	Dr. R. G. Curtis	Hollister
San Bernardino	Dr. D. C. Strong	San Bernardino
San Diego	Dr. Nathan Hunt	San Diego
San Francisco	Dr. W. F. McNutt, Jr.	San Francisco
San Joaquin	Dr. R. B. Knight	Stockton
San Luis Obispo	Dr. H. M. Cox	San Luis Obispo
San Mateo	Dr. W. G. Beattie	Colma
Santa Barbara	Dr. J. C. Bainbridge	Santa Barbara
Santa Clara	Dr. Wm. Simpson	San Jose
Santa Cruz	Dr. W. R. Congdon	Santa Cruz
Shasta	Dr. F. Stabel	Redding
Sierra	Dr. R. B. Davy	Downieville
Siskiyou	Dr. F. J. McNulty (County Physician)	Yreka
Solano	Dr. S. G. Bransford	Suisun
Sonoma	Dr. S. S. Bogle	Santa Rosa
Stanislaus	Dr. F. R. De Lappe	Modesto
Sutter	Dr. J. McFadyen	Yuba City
Tehama	Dr. E. E. Thompson	Red Bluff
Trinity	Dr. D. B. Fields	Weaverville
Tulare	Dr. F. A. Coombs	Visalia
Tuolumne	Dr. C. E. Congdon	Jamestown
Ventura	Dr. A. A. Maulhardt	Oxnard
Yolo	Dr. W. J. Blevins	Woodland
Yuba	Dr. J. H. Barr	Marysville

PARTIAL LIST OF PUBLIC HEALTH ORGANIZATIONS OF CALIFORNIA.

(A). California Public Health League.

President, Mr. A. Bonnheim, Sacramento.

Secretary, Dr. William F. Snow, Sacramento.

NOTE.—The League is made up of the Associations indicated by a (*) in the list given below. The purpose of the League is to serve as a clearing-house for all the common interests of the societies composing its membership. All correspondence should be addressed to the Secretary, Sacramento, California.

(B). Organizations Which Are Active Along Special Lines of Health Conservation.

I. Associations for the Prevention of Tuberculosis.

1. *California State Association for the Study and Prevention of Tuberculosis. President, Dr. F. C. E. Mattison, Pasadena; Secretary, Dr. George H. Kress, Bradbury Block, Los Angeles.
2. Affiliated Branch Societies: Alameda County, Long Beach, Los Angeles, Monrovia, Pasadena, Redlands, Sacramento, San Diego, San Francisco, Santa Ana, Santa Barbara, Sierra Madre, Stockton.

II. Associations for the Prevention of Syphilis and Gonococcus Infections.

1. *California State Association for the Study and Prevention of Syphilis and Gonococcus Infections. President, Dr. John C. Spencer, Butler Building, San Francisco; Secretary, Dr. R. A. Archibald, Department of Health, Oakland.

III. Associations for the Improvement of Milk Supplies.

1. *California State Association of Medical Milk Commissions. Dr. Lewis Sayre Mace, Chairman Executive Committee.
2. Affiliated branch commissions: San Francisco, Los Angeles, Oakland, San Jose, Sacramento, Santa Barbara.
3. San Francisco Milk Improvement Association.

IV. Associations for the Improvement of Child Hygiene.

1. *California Playground Association. President, O. K. Cushing, First National Bank Building, San Francisco; Secretary, C. E. Hudspeth, 781 Fifty-ninth Street, Oakland.
2. Local associations: Los Angeles, Oakland, Sacramento, Fresno, San Jose.

V. Miscellaneous Associations Carrying on Important Public Health Work.

1. *American Red Cross. There are chapters in San Francisco, Berkeley, Los Angeles, Stockton, Sacramento and Napa.
2. *California Federation of Women's Clubs.
3. *California Teachers' Association.
4. *California Press Association.
5. *State Charities Aid Association.
6. Anti-Mosquito Associations.
7. Association of Collegiate Alumnæ.
8. Civic Department, California Club, San Francisco.
9. "The Public Health Education Committee of the A. M. A.," Eleanor Seymour, M.D., Los Angeles, State Secretary.

This list is incomplete and will be changed each month as corrections and additions are sent in.

Names of officers and information concerning these associations will be sent on application to the State Associations listed, or to the Secretary of the State Board of Health.

PARTIAL LIST OF CITY HEALTH OFFICERS.

Alameda	Dr. L. W. Stidham
Alhambra	Dr. F. E. Corey
Alturas	Dr. John Stile
Anaheim	Dr. J. L. Beebe
Antioch	E. C. Worrell
Auburn	Dr. R. F. Rooney
Azusa	Dr. S. A. Ellis
Berkeley	Dr. J. J. Benton
Biggs	Dr. B. Caldwell
Black Diamond	Dr. F. S. Gregory
Bakersfield	J. E. Yancey
Chico	G. H. Taylor
Chino	Dr. P. M. Savage
Coalinga	Dr. H. C. Warren
Colton	Dr. J. A. Champion
Colusa	Dr. W. T. Rathbun
Corona	Dr. P. F. Page
Coronado	Dr. Raffaele Lorini
Davis	Dr. W. E. Bates
Doris	Dr. A. A. Atkinson
Dixon	Dr. R. L. Rierson
Dunsmuir	Dr. E. J. Cornish
East San Jose	Dr. W. A. Low
Elsinore	Dr. Hugh Walker
Econdido	Dr. David Crise
Etna	Dr. W. H. Haines
Eureka	Dr. W. L. Perrott
Fairfield	Dr. S. G. Bransford
Ferndale	Dr. L. Michael
Fort Jones	Thos. Bransom
Fresno	Dr. Geo. H. Aiken
Gilroy	Dr. Jonas Clark
Glendale	R. E. Chase
Grass Valley	Dr. C. P. Jones
Hayward	Dr. F. W. Browning
Healdsburg	Dr. O. C. Hueb
Hermosa Beach	H. Vetter
Hollywood	E. O. Palmer
Huntington Park	Dr. W. Thompson
Kernville	Mr. J. W. Sumner
Lakeport	Dr. Jabez Banks
Lincoln	Dr. G. W. Davis
Lindsay	Dr. Walter W. Tourtillott
Livermore	Dr. H. G. McGill
Lodi	Dr. F. W. Colman
Long Beach	Dr. W. H. Newman
Los Angeles	Dr. L. M. Powers
Los Gatos	Dr. Elenor S. Yelland
Madera	Dr. Mary R. Butin
Maricopa	Mr. Thad Cheeney
Martinez	Dr. E. E. Brown
McCloud	Dr. R. T. Legge
McKittrick	Mr. G. M. Chitwood
Merced	Dr. C. H. Castle
Mill Valley	Capt. M. Staples
Modesto	Dr. F. R. De Lappe
Mojave	Mr. A. Smith
Monrovia	Dr. R. D. Adams
Monterey	Martin Birks
Morgan Hill	Dr. D. W. Watt
Mountain View	Dr. Philo Hull
Napa	J. D. Treadway
National City	Dr. Theo. F. Johnson
Nevada City	Hugh Murchie
Oakland	Dr. E. N. Ewer
Ontario	Dr. C. S. Orr
Orange	Dr. F. L. Champline
Oroville	Dr. W. F. Gates
Oxnard	Dr. Ralph W. Avery
Pacific Grove	Dr. H. N. Yates
Palo Alto	Dr. T. M. Williams
Pasadena	Dr. Stanley P. Black
Petaluma	Dr. R. B. Duncan
Placerville	Mr. P. J. Hall
Pomona	Dr. T. J. Wilson
Piedmont	Geo. T. Burtchael
Randsburg	Mr. E. B. McGinnes
Redding	L. D. Poole
Redlands	Dr. J. M. Wheat
Redondo Beach	Dr. D. R. Hancock
Richmond	Dr. Chas. R. Blake
Riverside	Dr. Thos. R. Griffith
Rocklin	Dr. S. P. Rugg
Sacramento	Dr. Wm. K. Lindsay
Salinas	S. A. McCollum
San Bernardino	Dr. J. G. Ham
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San Francisco	Dr. W. F. McNutt, Jr.
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San Jacinto	Charles Long
Santa Ana	Dr. J. I. Clark
Santa Barbara	Dr. T. A. Stoddard
Santa Cruz	Dr. C. H. Anderson
Santa Monica	Dr. W. H. Parker
Santa Rosa	Dr. Jackson Temple, Jr.
Sisson	Dr. L. Gouzuet
South Pasadena	Dr. C. A. Whiting
Stockton	Dr. S. W. R. Langdon
Taft	Mr. J. W. Bursell
Tracy	Dr. J. G. Murrell
Turlock	Dr. E. L. Clough
Vacaville	Mr. A. P. Finan
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Watsonville	Dr. F. H. Koepke
Yreka	Dr. A. J. Collar

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